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UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

MAY, 94

Central Forecasting Division
Meteorological Office
London Rd
Bracknell
Berkshire
RG12 2SZ

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

Mr. A M Radford
Observation Processing Manager
Central Forecasting Division
Meteorological Office
London Road
Bracknell
Berkshire
United Kingdom
RG12 2SZ

2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 ms^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 $m\ s^{-1}$ have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed ($m\ s^{-1}$)
7	RMS observation-background vector ($m\ s^{-1}$)

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-11 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-12. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored
:Mean sea level pressure (hPa).
:Wind speed ($m\ s^{-1}$).
:Wind direction (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT
:15 hPa (pressure)
:25 $m\ s^{-1}$ (vector wind)

SELECTION CRITERIA :NOBS $\geq$ 20 , and one or more of the following:

1.|bias| $\geq$ 4 hPa (pressure),
$\geq$ 5 $m\ s^{-1}$ (wind speed),
$\geq$ 30 degrees (direction).

2.SD $\geq$ 6 hPa (pressure),
$\geq$ 80 degrees (direction).

3.PGE $\geq$ 25

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA-LEVEL PRESSURE									
CG3126	ALL	MSLP	SUR	36	4	11	4.9	-4.0	6.3
CZ9742	ALL	MSLP	SUR	22	21	95	0.0	-7.4	7.4
C6BK6	ALL	MSLP	SUR	25	0	0	2.1	-6.3	6.6
C6BT8	ALL	MSLP	SUR	24	0	0	2.3	6.0	6.4
C6HQ7	ALL	MSLP	SUR	24	1	4	2.3	-4.2	4.8
C6KB6	ALL	MSLP	SUR	33	0	0	1.9	5.6	5.9
ELFN7	ALL	MSLP	SUR	46	0	0	1.4	5.6	5.8
ELGI2	ALL	MSLP	SUR	25	0	0	1.3	-4.5	4.7
ELIU4	ALL	MSLP	SUR	24	1	4	1.2	-8.0	8.1
ELND2	ALL	MSLP	SUR	30	0	0	1.2	5.3	5.4
EUAF	ALL	MSLP	SUR	35	0	0	1.2	4.7	4.9
KXDB	ALL	MSLP	SUR	24	1	4	1.2	-8.4	8.5
LACF4	ALL	MSLP	SUR	32	0	0	4.4	5.6	7.1
NQST	ALL	MSLP	SUR	34	0	0	2.0	-4.2	4.7
P3ZL4	ALL	MSLP	SUR	31	0	0	1.1	-7.4	7.5
UHUN	ALL	MSLP	SUR	21	0	0	2.9	4.1	5.0
UHZK	ALL	MSLP	SUR	34	1	3	1.7	-11.3	11.4
UULE	ALL	MSLP	SUR	30	0	0	1.1	4.1	4.2
UUOD	ALL	MSLP	SUR	20	0	0	1.0	6.9	7.0
UYKD	ALL	MSLP	SUR	33	7	21	8.8	3.1	9.3
VRUA4	ALL	MSLP	SUR	36	0	0	1.3	4.8	4.9
WCZB	ALL	MSLP	SUR	23	0	0	1.0	6.6	6.7
WXY6216	ALL	MSLP	SUR	28	1	4	3.3	-4.0	5.2
WZE4928	ALL	MSLP	SUR	22	22	100	0.0	0.0	0.0
ZBWP	ALL	MSLP	SUR	47	0	0	1.4	4.1	4.3
3FBK	ALL	MSLP	SUR	53	0	0	0.8	9.3	9.4
43760008	ALL	MSLP	SUR	25	3	12	1.0	-7.6	7.7
5LGK	ALL	MSLP	SUR	32	2	6	1.9	-11.2	11.4
63103	ALL	MSLP	SUR	89	29	33	6.5	-2.5	7.0
WIND SPEED									
C6DY8	ALL	SPEED	SUR	41	0	0	4.3	5.6	7.1
C6KF2	ALL	SPEED	SUR	22	0	0	2.5	8.2	8.6
D5AN	ALL	SPEED	SUR	27	0	0	2.5	5.9	6.4
ELDL5	ALL	SPEED	SUR	23	1	4	7.5	10.1	12.6
ELLE9	ALL	SPEED	SUR	82	1	1	4.5	9.6	10.6
ELOG7	ALL	SPEED	SUR	30	0	0	3.6	5.3	6.4
FNIH	ALL	SPEED	SUR	90	4	4	5.2	12.4	13.4
FNVA	ALL	SPEED	SUR	31	0	0	3.4	5.0	6.0
NQST	ALL	SPEED	SUR	31	0	0	3.0	6.5	7.1
PFRX	ALL	SPEED	SUR	46	0	0	4.8	6.7	8.2
VYSM	ALL	SPEED	SUR	28	0	0	3.8	5.0	6.2
XYKS	ALL	SPEED	SUR	25	1	4	5.7	5.9	8.2
WIND DIRECTION									
CG2614	ALL	DIRN.	SUR	33	0	0	23.7	30.6	38.7
UYKD	ALL	DIRN.	SUR	23	0	0	113.6	-32.5	118.1
YDLR	ALL	DIRN.	SUR	30	0	0	43.1	-31.0	53.1
42001	ALL	DIRN.	SUR	54	0	0	81.2	27.3	85.6
42027	ALL	DIRN.	SUR	45	0	0	150.4	-40.3	155.7
43001	ALL	DIRN.	SUR	25	0	0	92.1	-16.6	93.6
45004	ALL	DIRN.	SUR	49	0	0	24.3	-31.2	39.6
46146	ALL	DIRN.	SUR	38	0	0	58.6	-43.3	72.8
46181	ALL	DIRN.	SUR	31	0	0	84.8	-18.9	86.9
52008	ALL	DIRN.	SUR	33	0	0	45.5	-31.2	55.2
64043	ALL	DIRN.	SUR	558	11	2	120.0	-39.5	126.3

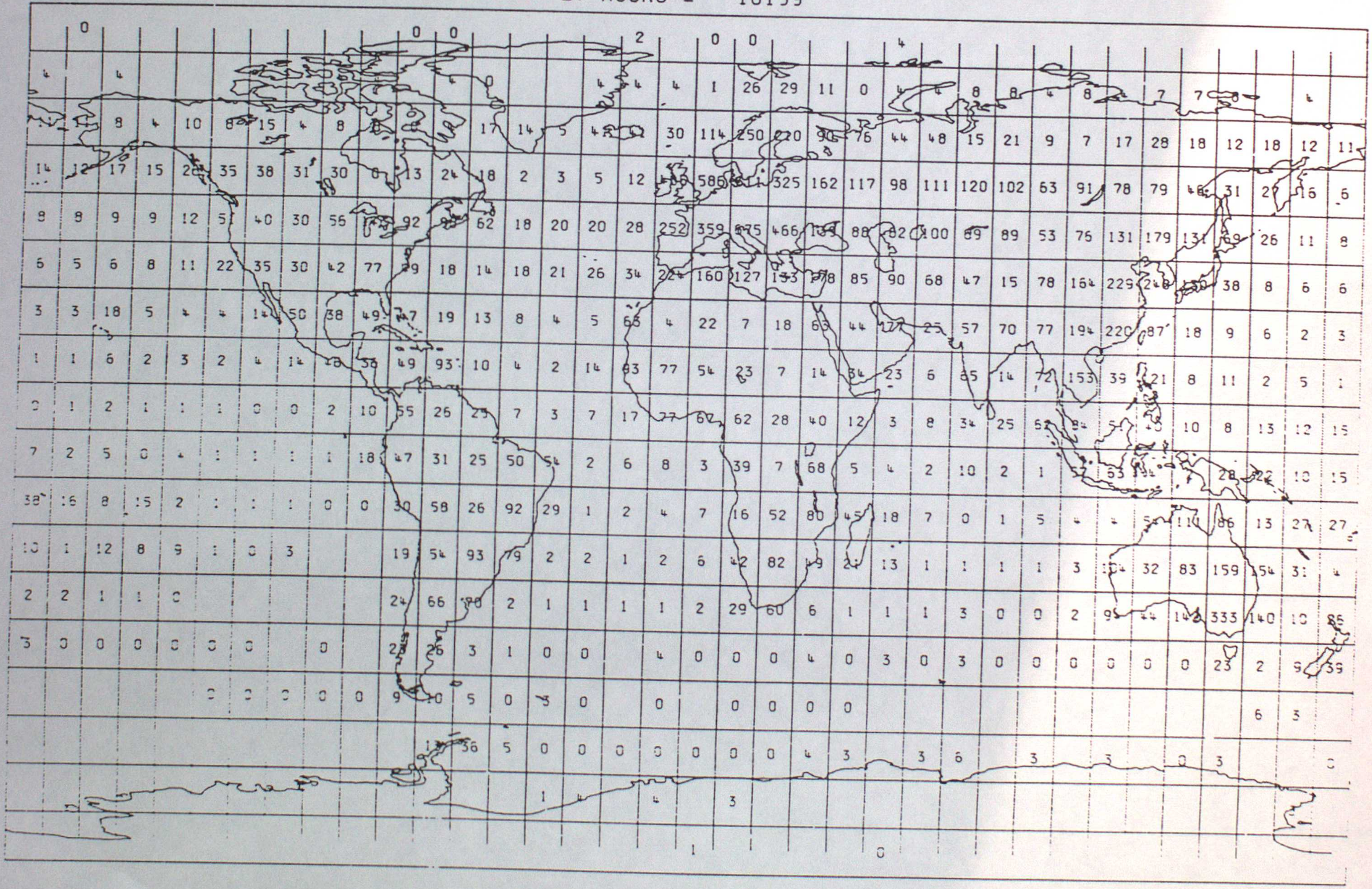
AVAILABILITY - SHIP/SYNOP - MAY 1994

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 18159

FIGURE 1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14 12 17 15 2 35 38 31 30 0 13 24 18 2 3 5 12 586 325 162 117 98 111 120 102 63 91 78 79 46 31 27 16 6
9 9 9 9 12 51 40 30 56 92 62 18 20 20 28 252 359 675 466 88 82 100 89 89 53 75 131 179 131 69 26 11 8
6 5 6 8 11 22 35 30 42 77 29 18 14 18 21 26 34 224 160 127 153 78 85 90 68 47 15 78 164 229 248 130 38 8 6 6
3 3 18 5 4 4 14 50 38 49 47 19 13 8 4 5 65 4 22 7 18 65 44 17 25 57 70 77 194 220 87 18 9 6 2 3
1 1 6 2 3 2 4 14 18 38 49 93 10 4 2 14 83 77 54 23 7 14 34 23 6 65 14 72 153 39 21 8 11 2 5 1
0 1 2 1 1 1 0 0 2 10 55 26 25 7 3 7 17 77 67 62 28 40 12 3 8 34 25 52 94 5 40 10 8 13 12 15
7 2 5 0 4 1 1 1 1 18 47 31 25 50 54 2 6 8 3 39 7 68 5 4 2 10 2 1 53 194 28 22 10 15
38 16 8 15 2 1 1 1 0 0 30 58 26 92 29 1 2 4 7 16 52 80 45 18 7 0 1 5 4 4 5 110 86 13 27 27
10 1 12 8 9 1 0 3 19 54 93 79 2 2 1 2 6 42 82 49 24 13 1 1 1 1 3 104 32 83 159 154 31 4
2 2 1 1 0 24 66 70 2 1 1 1 1 2 29 60 6 1 1 1 3 0 0 2 95 44 142 333 140 10 85
3 0 0 0 0 0 0 0 23 26 3 1 0 0 4 0 0 0 4 0 3 0 3 0 0 0 0 0 0 23 2 9 39
0 0 0 0 0 9 10 5 0 3 0 0 0 0 0 0 6 3
13 36 5 0 0 0 0 0 0 0 4 3 3 6 3 3 0 3 0
1 4 4 3
1 0

TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoys.

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 06, 12, 18 UTC

Elements monitored
:Mean sea level pressure (hPa).
:Wind speed ($m\ s^{-1}$).
:Wind direction (degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT
:15 hPa (pressure)
:25 $m\ s^{-1}$ (vector wind)

SELECTION CRITERIA :NOBS $\geq$ 20 , and one or more of the following:

1.|bias| $\geq$ 4 hPa (pressure),
$\geq$ 5 $m\ s^{-1}$ (wind speed),
$\geq$ 30 degrees (direction).

2.SD $\geq$ 6 hPa (pressure),
$\geq$ 80 degrees (direction).

3.PGE $\geq$ 25.

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA-LEVEL PRESSURE											
17569	-29.6	-4.9	ALL	MSLP	SUR	261	0	0	3.9	-7.7	8.7
25536	61.2	49.6	ALL	MSLP	SUR	24	0	0	1.8	-6.9	7.1
71556	-68.1	-135.0	ALL	MSLP	SUR	298	23	8	6.2	-1.2	6.3

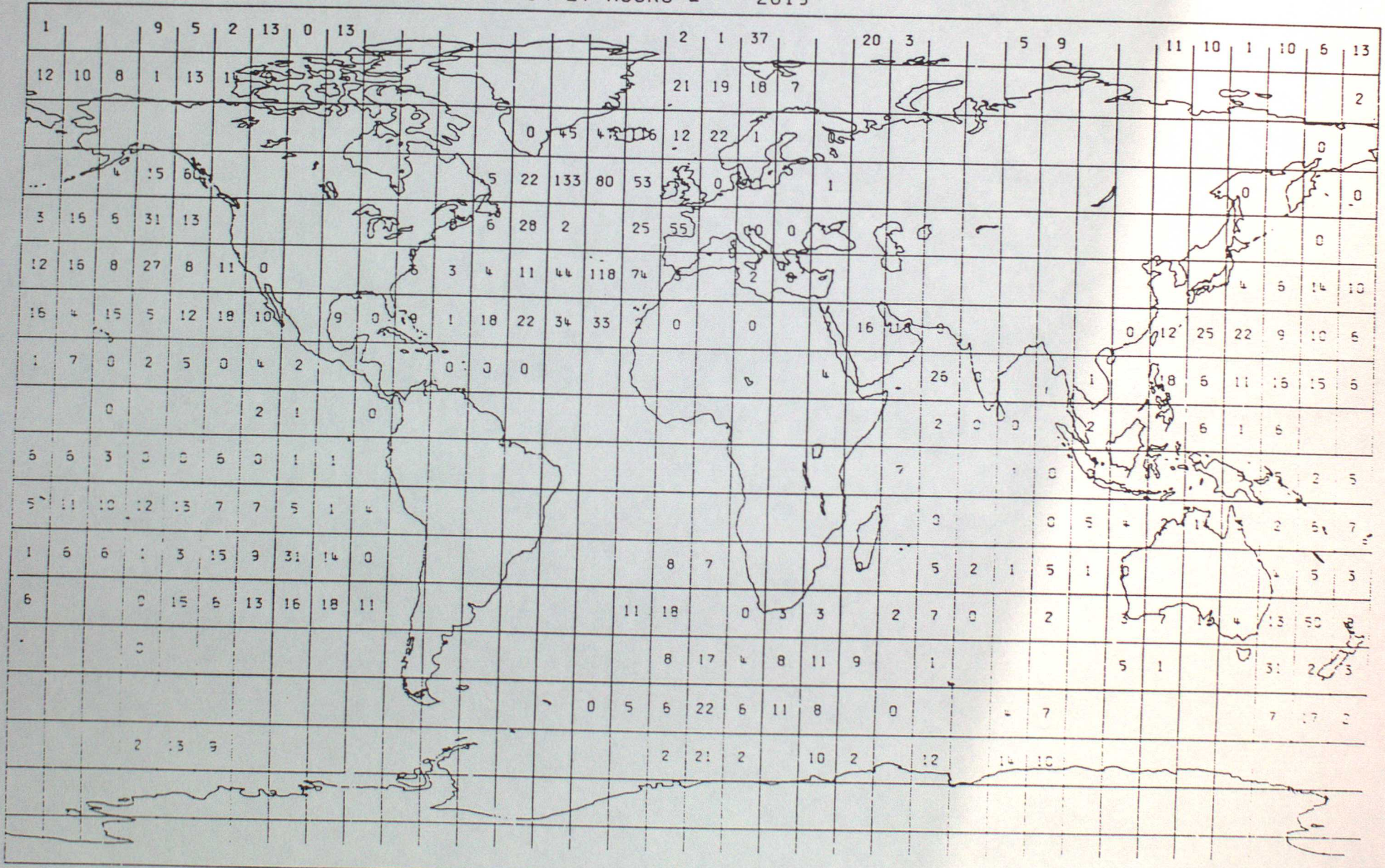
AVAILABILITY - DRIBU - MAY 1994

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 2819

FIGURE 2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2
0 45 12 22 1
0
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0
12 16 8 27 8 11 0 3 4 11 44 118 74 2 4 6 14 10
16 4 15 5 12 18 10 9 0 1 18 22 34 33 0 0 16 0 12 25 22 9 10 6
1 7 0 2 5 0 4 2 0 0 0 4 25 1 8 5 11 15 15 6
0 2 1 0 2 0 0 2 6 1 6
5 6 3 0 0 6 0 1 1 7 1 0 2 5
5 11 10 12 13 7 7 5 1 4 0 0 5 4 2 6 7
1 6 6 3 15 9 31 14 0 8 7 5 2 1 5 1 4 5 3
6 0 15 6 13 16 18 11 11 18 0 3 3 2 7 0 2 3 7 4 13 50 2
0 8 17 4 8 11 9 1 5 1 31 2 3
0 5 6 22 6 11 8 0 4 7 7 17 0
2 13 9 2 21 2 10 2 12 14 10

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1.|bias|	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

Note:- **For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.**
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	116	3	3	78	1.3	4.4	4.6
60468	35.6N	6.2E	1052	S8	113	113	100	25	0.0	0.0	0.0
60511	35.3N	1.4E	1127	S8	116	109	94	100	0.4	14.5	14.5
60571	31.6N	2.2W	773	S8	114	1	1	19	1.9	-4.7	5.1
60670	24.6N	9.5E	1054	S8	113	0	0	98	1.5	8.6	8.7
63333	11.1N	39.7E	1916	MS	42	0	0	98	2.2	7.9	8.2
63402	7.7N	36.8E	1577	MS	73	44	60	97	0.7	-13.9	13.9
63453	8.8N	39.8E	1062	S	59	2	3	98	1.4	12.1	12.2
63474	7.1N	40.0E	2450	S	42	42	100	0	0.0	0.0	0.0
63478	5.1N	44.6E	320	MS	40	0	0	55	1.3	6.9	7.0
63801	4.9S	29.6E	885	S	46	2	4	96	1.1	8.1	8.2
64503	3.4S	10.7E	34	M	73	0	0	99	1.3	-7.4	7.5
64507	2.9S	11.0E	79	M	92	0	0	98	1.8	-7.0	7.2
64911	5.0N	9.9E	821	8	83	1	1	33	2.2	-4.0	4.6
67022	14.7S	49.6E	474	MS	38	37	97	0	0.0	-1.7	1.7
68014	19.6S	18.1E	1411	S8	88	0	0	83	1.0	-5.7	5.8
68752	32.8S	27.4E	524	S8	93	0	0	97	1.2	-8.3	8.4

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
25902	60.8N	151.8E	797	MS	54	2	4	98	1.7	-12.9	13.0
29999	52.5N	99.8E	1570	S8	97	96	99	92	0.0	-2.0	2.0
30554	54.5N	113.6E	995	MS	60	1	2	98	1.2	10.9	11.0
38696	39.6N	66.9E	675	MS	56	0	0	82	1.0	-4.5	4.6
38836	38.6N	68.8E	824	MS	56	0	0	5	1.4	4.5	4.7
40356	31.7N	38.7E	818	S8	117	0	0	57	1.2	-4.5	4.7
40376	27.6N	38.6E	860	MS	76	76	100	0	0.0	0.0	0.0
40432	25.8N	42.0E	783	MS	74	74	100	0	0.0	0.0	0.0
40450	23.7N	44.6E	1080	MS	77	77	100	0	0.0	0.0	0.0
40726	36.8N	45.7E	1385	MS	74	1	1	73	1.6	5.1	5.3
40743	36.2N	57.7E	941	MS	109	2	2	39	1.2	-5.2	5.3
40762	35.3N	59.2E	1333	MS	106	13	12	95	1.7	-13.0	13.1
40859	29.0N	53.7E	1383	MS	99	2	2	98	1.1	9.1	9.2
41035	21.3N	40.3E	2089	S7	34	34	100	0	0.0	0.0	0.0
41254	23.1N	57.7E	1755	S	83	83	100	100	0.0	0.0	0.0
44277	46.4N	96.3E	2147	MS	95	1	1	0	1.7	-4.8	5.1
44292	47.9N	107.0E	1338	MS	94	0	0	0	1.4	4.7	4.9
44416	28.6N	81.6E	720	MS	69	0	0	0	1.7	6.0	6.2
44477	27.0N	87.4E	1445	S8	74	74	100	100	0.0	0.0	0.0
51467	42.7N	86.3E	1753	S	118	0	0	0	2.1	6.5	6.8
52602	38.8N	93.4E	2734	S	117	0	0	0	2.3	-5.5	6.0
52866	36.7N	101.8E	2296	S	119	0	0	25	2.2	5.6	6.0
56287	30.0N	103.0E	629	M	117	0	0	21	2.0	4.7	5.1
56444	28.5N	98.9E	3488	S	117	117	100	99	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	109	0	0	0	2.6	6.5	7.0
57622	28.9N	107.2E	1907	S	109	1	1	0	1.3	-9.4	9.5
57816	26.5N	106.7E	1222	MS	119	117	98	100	3.6	11.0	11.6

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80099	7.1N	70.7W	128	M	40	0	0	55	2.1	-4.1	4.6
80431	9.9N	67.3W	429	M	52	3	6	35	1.8	-4.3	4.7
82287	2.9S	41.6W	22	MS	54	25	46	100	2.8	-9.9	10.3
82704	7.6S	72.7W	170	MS	76	0	0	0	2.0	-4.0	4.5
83235	12.3S	46.4W	660	MS	42	0	0	83	0.9	6.1	6.2
83295	13.4S	39.9W	755	MS	29	1	3	93	0.6	-4.4	4.4

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
83332	14.1S	46.4W	950	MS	84	11	13	99	0.7	13.6	13.6
83423	16.7S	49.3W	729	MS	83	0	0	40	1.2	-5.1	5.2
83488	17.8S	42.9W	1097	MS	71	71	100	94	0.0	0.0	0.0
83531	18.6S	46.5W	896	MS	76	1	1	76	1.0	-7.0	7.1
83587	19.8S	43.9W	850	MS	83	0	0	0	0.9	-7.9	8.0
83689	21.3S	43.8W	1171	MS	55	1	2	96	0.8	5.2	5.3
83704	22.3S	53.9W	369	MS	60	2	3	97	1.6	-9.7	9.8
83736	22.1S	45.0W	900	MS	23	0	0	83	1.2	4.5	4.7
83811	24.4S	50.8W	808	M	59	0	0	64	1.6	4.5	4.8
84401	5.2S	80.6W	50	MS	94	0	0	0	1.8	4.3	4.7
84425	5.9S	76.1W	184	MS	50	0	0	0	2.3	4.9	5.4
84455	6.5S	76.4W	282	MS	57	0	0	7	1.7	5.3	5.6
84472	7.1S	78.5W	2622	S	52	0	0	85	2.2	-6.8	7.1
84531	9.2S	78.5W	21	MS	53	0	0	0	1.1	5.2	5.3
84658	12.6S	69.2W	266	MS	71	0	0	0	2.4	6.0	6.5
84686	13.6S	72.0W	3249	S	114	0	0	20	2.0	-5.8	6.1
84782	18.1S	70.3W	469	MS	103	0	0	0	1.6	4.8	5.1
85201	16.5S	68.2W	4071	S	118	0	0	0	2.0	5.2	5.6
85230	17.6S	69.4W	4057	S	55	2	4	4	1.3	4.4	4.6
85406	18.3S	70.3W	58	M	117	0	0	0	1.5	5.5	5.7
87046	24.4S	65.1W	905	S8	93	93	100	0	0.0	0.0	0.0
87322	31.3S	66.6W	658	MS	82	82	100	0	0.0	0.0	0.0

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
76118	30.4N	109.7W	1040	MS	34	2	6	94	1.0	-9.8	9.9
76373	25.3N	105.8W	1967	MS	56	46	82	100	0.7	13.7	13.7
76539	22.1N	101.0W	1871	MS	84	1	1	77	1.1	-4.9	5.0
76632	20.1N	98.7W	2417	MS	59	0	0	97	1.0	-6.7	6.8
76692	19.1N	96.1W	13	MS	70	0	0	1	1.3	4.3	4.5
76726	18.9N	99.3W	1560	MS	83	0	0	100	1.3	-8.3	8.4
76762	17.5N	99.5W	1360	MS	76	2	3	99	1.3	11.1	11.2
76848	16.3N	92.1W	1530	MS	83	5	6	98	0.8	-13.1	13.1
78397	18.1N	76.9W	786	MS	106	106	100	0	0.0	0.0	0.0
78501	17.4N	83.9W	11	M	35	10	29	0	4.8	-1.1	4.9

WMO REGION 5:

NO SUSPECTS IN THIS REGION

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	88	0	0	93	1.0	-4.8	4.9
01446	59.6N	8.3E	804	MS	86	0	0	100	1.0	11.1	11.1
08221	40.5N	3.6W	633	MS	111	1	1	96	1.4	6.1	6.3
11241	47.2N	15.5E	1438	S8	87	22	25	34	4.2	-2.7	5.0
11346	47.3N	12.8E	917	S	84	0	0	69	1.6	-4.5	4.8
16020	46.5N	11.3E	1461	MS	88	88	100	0	0.0	0.0	0.0
16614	40.4N	21.3E	604	MS	93	0	0	99	1.3	-7.4	7.5
17084	40.6N	35.0E	837	MS	120	0	0	99	1.2	7.1	7.2
17260	37.1N	37.4E	855	MS	117	116	99	100	0.0	14.6	14.6
37228	43.1N	44.6E	670	MS	56	0	0	93	1.8	-4.2	4.6
40184	31.8N	35.2E	809	S8	118	1	1	98	1.4	6.0	6.2

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89009	90.0S	0.0	2800	S	42	5	12	21	5.3	-4.0	6.6
89667	78.0S	166.5E	20	MS	97	1	1	5	3.8	4.5	5.9
89757	73.8S	55.7E	2775	S7	59	59	100	93	0.0	0.0	0.0
89803	68.5S	102.2E	2118	S7	76	10	13	43	3.1	-8.1	8.7
89805	74.1S	109.8E	3070	S7	77	25	32	14	4.5	-1.1	4.6
89811	66.7S	112.9E	1362	S8	87	13	15	67	3.7	-8.9	9.6
89828	74.5S	123.0E	3280	S7	100	14	14	55	4.8	7.7	9.1
89832	66.7S	139.8E	240	MS	67	67	100	100	0.0	0.0	0.0
89860	74.2S	160.3E	1772	S8	94	0	0	9	4.0	-6.4	7.5
89861	74.5S	160.5E	1525	S8	86	3	3	17	4.1	-8.2	9.2
89866	77.4S	163.8E	120	MS	98	4	4	28	3.6	5.2	6.3
89868	79.9S	169.8E	60	MS	96	96	100	98	0.0	0.0	0.0

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures		
Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:All hours combined.
Level(s) monitored		:70.0 - 500.0 hPa
Elements monitored		:TEMP in °C ; WIND in m s^{-1}
Parameters monitored		
	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.
GROSS ERROR LIMITS		:10.0 °C ; 60 m s^{-1} Vector Wind
SELECTION CRITERIA		:N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAA	133	3	5	2.3	1.0	132	0	6	2	11.4	0.4
AAL	3618	0	1	1.8	0.1	3643	0	2	0	8.2	1.4
AAN	114	1	7	2.1	-0.2	112	0	9	0	10.6	1.7
AAR	1387	1	1	1.7	-0.2	1378	0	2	0	9.0	1.4
ACA	899	1	1	1.9	-0.2	922	0	3	2	6.9	0.6
ACI	48	0	4	2.1	0.1	48	0	4	0	10.2	-0.6
ADV	20	0	0	2.4	1.3	20	0	5	5	7.7	2.8
AEA	91	4	2	1.7	-0.2	84	0	0	0	7.6	1.0
AEL	247	0	1	1.5	0.0	252	0	1	0	8.1	1.4
AFL	83	6	100	3.7	2.3	84	0	100	1	13.5	2.8
AFR	1098	1	4	1.9	0.1	1100	0	5	1	7.6	1.4
AIC	30	0	0	2.4	-0.3	30	0	17	0	16.1	3.7
AJJ	70	0	1	2.2	-0.1	70	0	4	0	10.6	2.3
AMT	196	1	2	1.6	0.4	203	0	2	1	8.3	1.3
AMX	328	1	1	1.9	0.0	330	0	1	0	8.0	1.4
ANA	890	0	1	1.8	0.1	890	0	2	1	9.1	1.9
ANT	26	0	0	1.2	-0.9	26	0	0	0	6.1	1.5
ANZ	3003	1	2	1.9	-0.1	2990	0	2	1	8.5	1.6
AOM	681	0	2	1.8	0.7	687	0	3	0	8.2	1.5
ARG	52	0	0	2.0	0.1	52	0	6	2	9.6	2.2
ARP	260	1	5	1.9	0.3	253	1	8	4	8.6	1.3
ATN	171	0	3	2.2	-1.6	174	0	9	1	13.4	3.9
AUA	87	0	3	2.2	-1.2	88	0	3	0	8.5	1.4
AVA	387	1	2	1.6	0.0	389	0	2	0	8.1	1.5
AVN	35	0	0	1.9	1.1	35	0	0	0	9.1	4.2
AZA	413	0	3	2.1	0.7	425	0	4	0	8.9	2.3
BAL	256	0	11	2.0	-0.2	264	0	11	0	7.5	0.9
BAW	1639	0	3	1.9	-0.1	1648	0	4	0	7.5	1.5
BBB	92	1	14	1.6	-0.9	91	0	14	0	6.6	1.6
BWA	432	1	2	1.9	1.1	434	0	1	0	7.7	1.8
CAL	1709	1	1	1.8	0.0	1716	0	2	0	9.1	1.7
CCA	292	1	95	2.4	0.2	293	1	8	0	11.8	1.8
CDN	2304	0	2	2.2	0.5	2304	0	2	0	8.5	1.7
CES	158	0	1	1.8	0.6	158	0	1	0	8.6	1.2
CFC	24	4	4	1.7	-0.6	25	0	4	0	8.1	0.4
CFG	717	1	100	1.9	-0.9	722	0	3	0	7.5	0.9
CKS	134	0	99	2.2	-0.1	139	1	99	1	11.3	3.3
CKT	62	0	5	1.4	0.3	60	0	8	0	8.6	1.5
CLX	51	0	0	1.6	-0.3	53	0	4	2	6.6	1.0
CMI	1230	0	3	2.1	0.4	1229	0	5	1	9.1	2.0
CMM	203	0	1	1.7	-0.1	202	0	1	0	9.0	1.1
COA	688	0	2	1.6	0.3	688	0	3	0	7.5	1.2
CPA	156	1	0	1.6	0.2	156	0	3	1	8.9	0.6
CRL	134	3	4	1.9	0.2	134	0	3	1	7.8	1.2
CTM	106	0	99	3.3	-0.6	106	0	11	1	8.1	1.8
CUB	147	1	8	2.0	1.1	150	0	8	1	10.4	3.0
DAE	20	10	0	2.4	0.6	20	0	0	0	6.4	2.0
DAL	5151	1	2	2.1	0.5	4965	0	1	0	8.1	1.5
DHL	163	1	9	3.4	-1.8	161	1	100	2	10.4	1.8
DLH	3481	1	7	2.0	0.0	3395	0	11	4	7.4	1.5
DOA	207	2	11	1.8	-0.1	206	0	11	0	9.8	1.1
EIA	82	2	15	2.5	0.1	86	0	14	0	11.5	3.5
ELY	67	3	7	1.6	-0.4	68	0	6	0	6.9	1.4
EVA	1336	0	1	1.9	-0.4	1333	0	2	0	9.5	1.5
EWW	36	0	17	4.0	1.6	38	0	24	0	17.4	8.7
FDX	964	1	2	1.9	0.8	990	0	2	1	8.2	1.1
FIN	387	0	1	2.0	0.3	388	0	2	1	7.9	1.6
FJI	389	1	2	2.0	1.1	391	0	3	1	9.8	2.1
FKC	25	0	0	3.0	-0.9	25	0	0	0	6.6	2.1

		TEMPERATURE						WIND			
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
FMN	33	0	6	2.4	0.9	33	0	6	0	11.7	-1.6
GAF	157	0	2	2.1	0.0	157	0	4	3	7.1	1.1
GIA	266	3	3	1.5	0.5	263	0	3	1	8.1	1.3
HAL	995	0	0	1.6	0.6	995	0	2	1	8.3	0.9
HLF	155	1	100	1.7	-0.8	157	0	4	1	8.2	1.6
IBE	1595	1	11	1.8	0.1	1581	0	12	0	9.0	1.0
ICE	396	1	1	1.6	0.0	390	0	4	2	6.7	1.0
JAA	64	2	6	2.3	1.0	63	0	5	0	7.5	2.6
JAL	5265	0	1	1.8	0.2	5278	0	2	0	9.0	1.4
JAS	104	0	0	1.3	0.5	104	0	0	0	8.0	0.1
JAZ	126	0	83	1.9	1.1	126	0	2	0	7.7	0.5
KAL	2978	1	1	2.0	0.1	2973	0	2	0	9.2	1.2
KIW	32	0	0	2.4	0.9	32	0	3	0	8.1	0.9
KLM	2053	0	2	1.9	0.4	2061	0	2	1	7.6	1.6
LDA	274	0	100	1.9	-1.0	281	0	8	0	7.0	0.3
LDI	137	0	100	1.9	-1.1	138	0	4	0	8.1	0.0
LIB	101	3	2	1.6	-0.4	101	0	3	1	7.4	-0.4
LOT	607	1	2	1.9	-0.3	606	0	2	0	8.0	1.2
LTU	640	0	3	1.7	0.3	626	0	4	0	8.5	1.9
LWD	227	1	2	1.3	0.4	252	0	2	0	7.9	1.0
MAH	86	0	0	1.9	-0.7	86	0	2	0	6.8	0.9
MAS	292	1	2	1.9	-0.1	293	0	3	1	10.3	0.7
MDA	132	1	93	1.8	0.2	130	0	2	0	9.5	2.3
MPH	504	0	2	1.7	-0.1	507	0	2	0	7.9	1.4
NAL	105	0	100	2.2	0.9	105	0	6	1	10.1	1.3
NCA	601	0	0	1.9	0.5	603	0	3	1	8.5	1.1
NGA	103	1	3	1.4	0.2	102	0	4	0	11.5	0.9
NWA	9972	1	2	2.1	0.6	9985	0	3	1	9.0	1.3
OAL	25	0	8	3.1	2.4	25	0	4	0	5.5	1.0
PAL	990	1	1	1.7	-0.4	994	0	3	1	9.5	1.3
PAO	289	1	2	1.6	0.6	290	1	2	0	8.5	1.2
QFA	1973	1	2	1.8	0.2	1962	0	3	1	8.4	1.6
QFX	31	0	0	0.7	0.1	31	0	0	0	6.6	2.1
RAF	174	1	1	1.7	0.3	168	0	1	0	9.4	2.0
RBA	25	0	0	1.3	0.4	25	0	0	0	7.5	1.3
RJA	44	0	7	2.3	0.8	46	2	7	0	7.7	2.8
RKA	54	2	0	1.3	0.2	54	0	2	0	7.9	1.3
RON	56	0	0	2.0	0.4	56	0	2	2	7.5	0.5
ROY	24	0	0	2.0	1.0	26	0	0	0	6.3	1.4
RRR	198	2	18	2.0	0.1	199	0	22	3	9.0	2.2
SAA	278	1	3	1.9	-0.8	276	0	4	0	9.1	1.7
SAB	73	0	3	2.5	0.3	75	0	3	0	8.3	1.7
SAS	1879	0	1	1.9	-0.2	1871	0	2	2	6.5	1.0
SIA	1245	0	2	1.9	-0.2	1244	0	3	1	10.3	1.7
SJM	68	0	6	1.5	0.3	73	0	5	0	8.3	1.5
SOL	46	0	0	1.4	0.6	46	0	0	0	7.6	1.5
SPP	154	1	2	1.6	0.1	151	0	1	0	9.1	1.3
SVA	89	1	8	2.5	0.5	90	0	8	0	7.6	1.5
SWR	309	0	3	2.0	0.4	306	0	4	1	8.0	0.8
TAP	623	1	3	2.0	-0.1	615	0	3	0	9.5	2.1
THA	278	0	1	1.7	0.0	277	0	4	1	9.4	2.1
TIH	128	0	2	1.8	0.2	128	0	2	0	7.5	1.5
TOW	61	0	10	2.2	0.5	62	0	10	0	7.6	1.0
TSC	89	7	8	2.0	-0.5	93	0	5	1	8.1	2.0
TWA	1263	0	2	2.0	0.4	1264	0	2	1	8.4	0.9
UAL	70453	1	3	1.4	0.1	70415	0	2	0	7.6	0.9
ULE	193	1	4	1.8	0.5	193	1	3	0	7.6	1.5
UPS	637	2	9	1.9	-0.4	647	0	10	0	8.9	1.0
USA	78	0	5	1.8	0.0	78	0	6	3	5.5	0.7

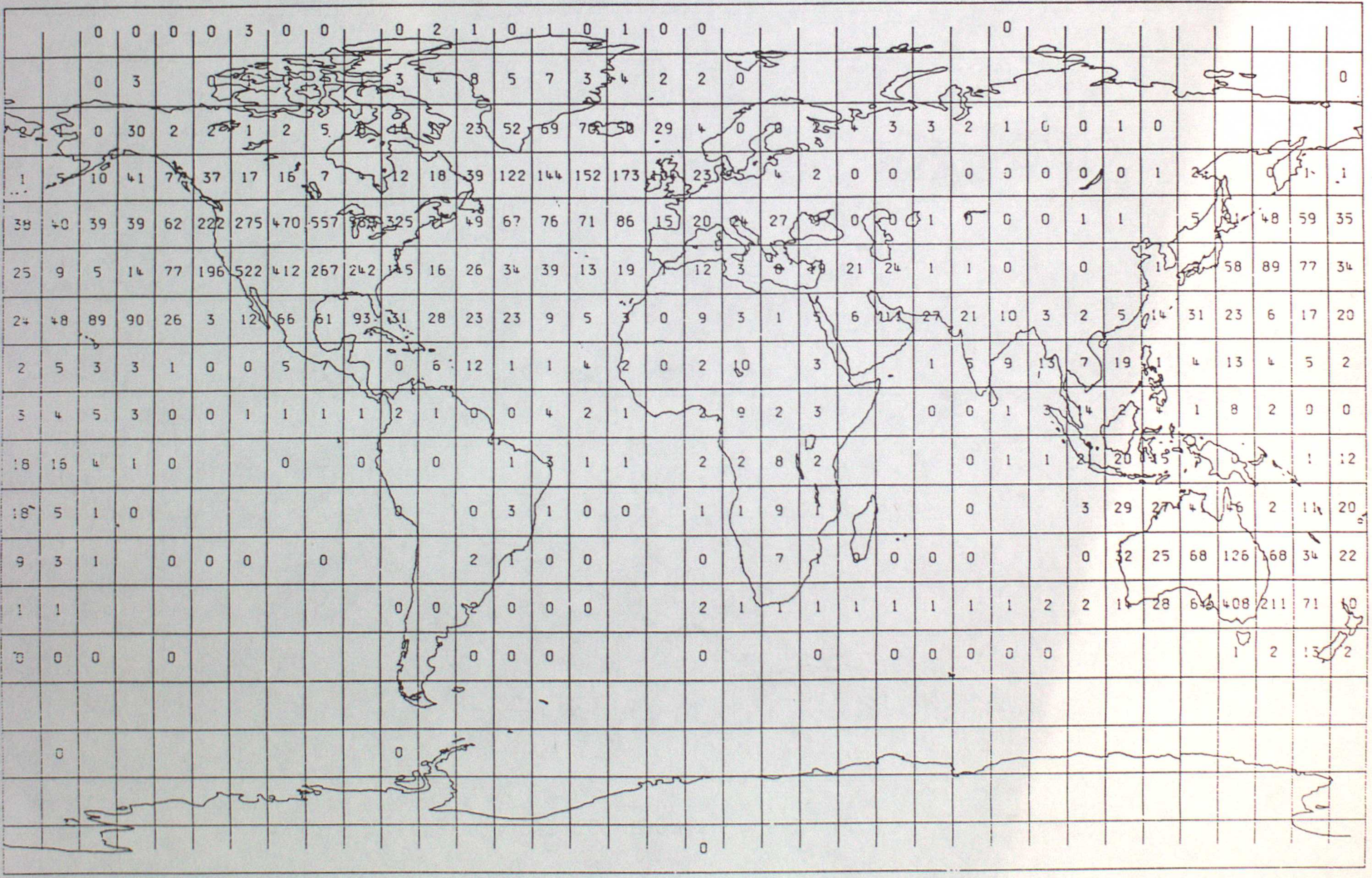
IDENT.	TEMPERATURE					WIND					
	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
VIA	463	1	3	1.9	0.5	468	0	4	1	8.2	0.4
VIR	114	0	1	1.9	-0.3	118	0	3	1	9.0	1.0
VRB	37	0	14	3.1	-0.2	35	0	14	0	13.1	5.3
VRG	20	0	5	1.8	-0.6	21	0	10	0	14.7	-0.1
VSP	96	0	0	2.1	0.3	96	0	0	1	8.3	0.9
WOA	21	0	10	3.2	2.3	21	0	5	0	7.0	0.6
AN	24493	0	2	1.5	0.2	24301	0	2	0	7.5	1.7
BA	25129	0	18	1.7	0.5	25037	0	18	0	7.4	1.7
DL	243	0	96	2.4	0.4	243	44	96	1	43.4	-1.1
FJ	37	0	3	2.6	1.3	38	0	3	0	9.2	1.6
KL	5485	0	70	2.2	1.5	5474	0	5	0	6.4	1.1
LH	2044	0	2	1.9	0.1	2021	0	2	0	8.2	1.7
NW	49444	0	5	1.5	0.1	49422	0	2	0	6.7	1.0
QF	13639	0	1	1.3	0.3	13610	0	1	0	6.9	1.3
M	240	4	9	3.3	1.0	245	0	8	0	12.4	3.6
N	354	4	6	2.6	0.4	362	0	1	0	8.6	1.1

MEAN DAILY COUNT OF AIRCRAFT 70 - 500 HPA

MAY 1994

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

FIGURE 3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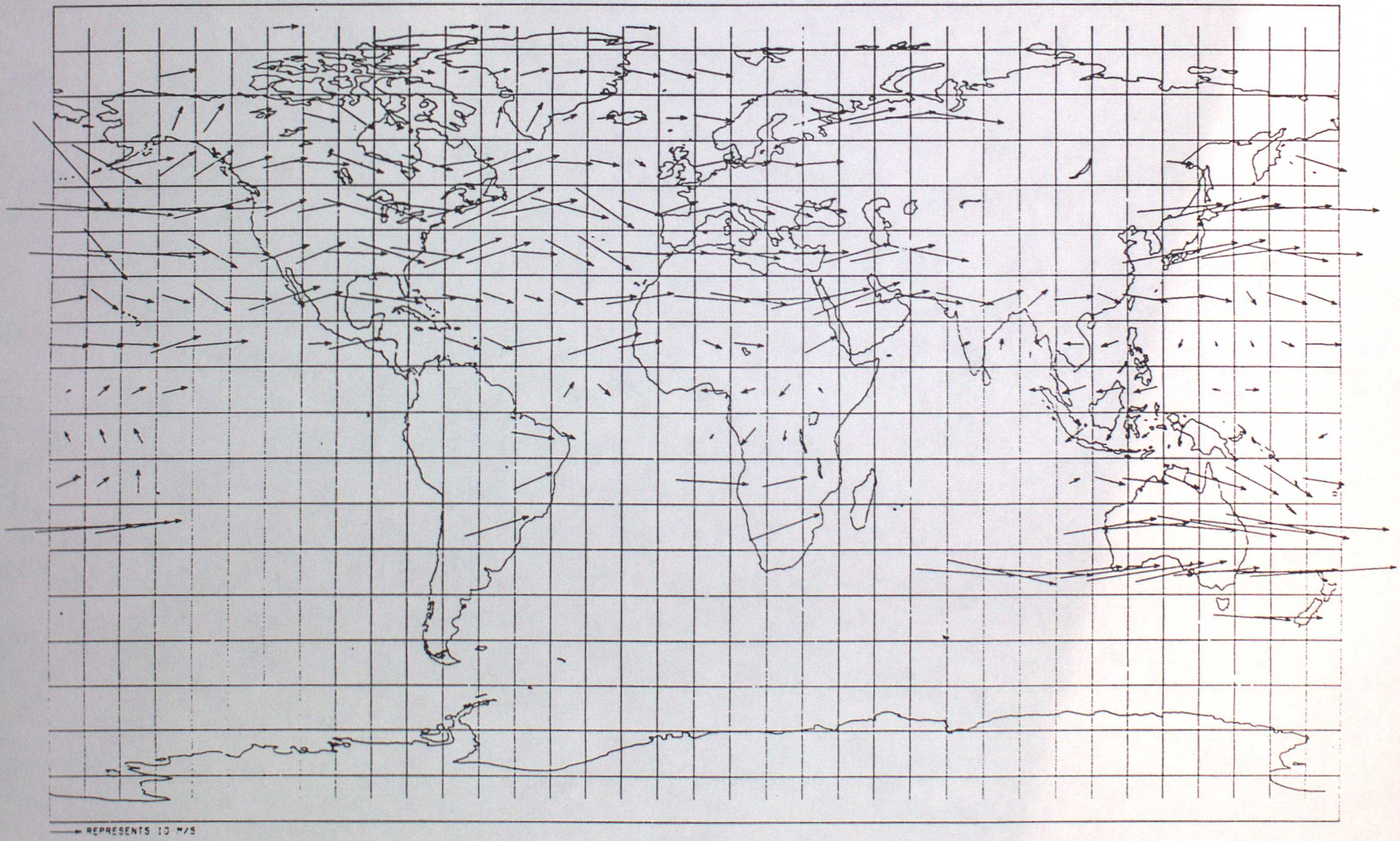
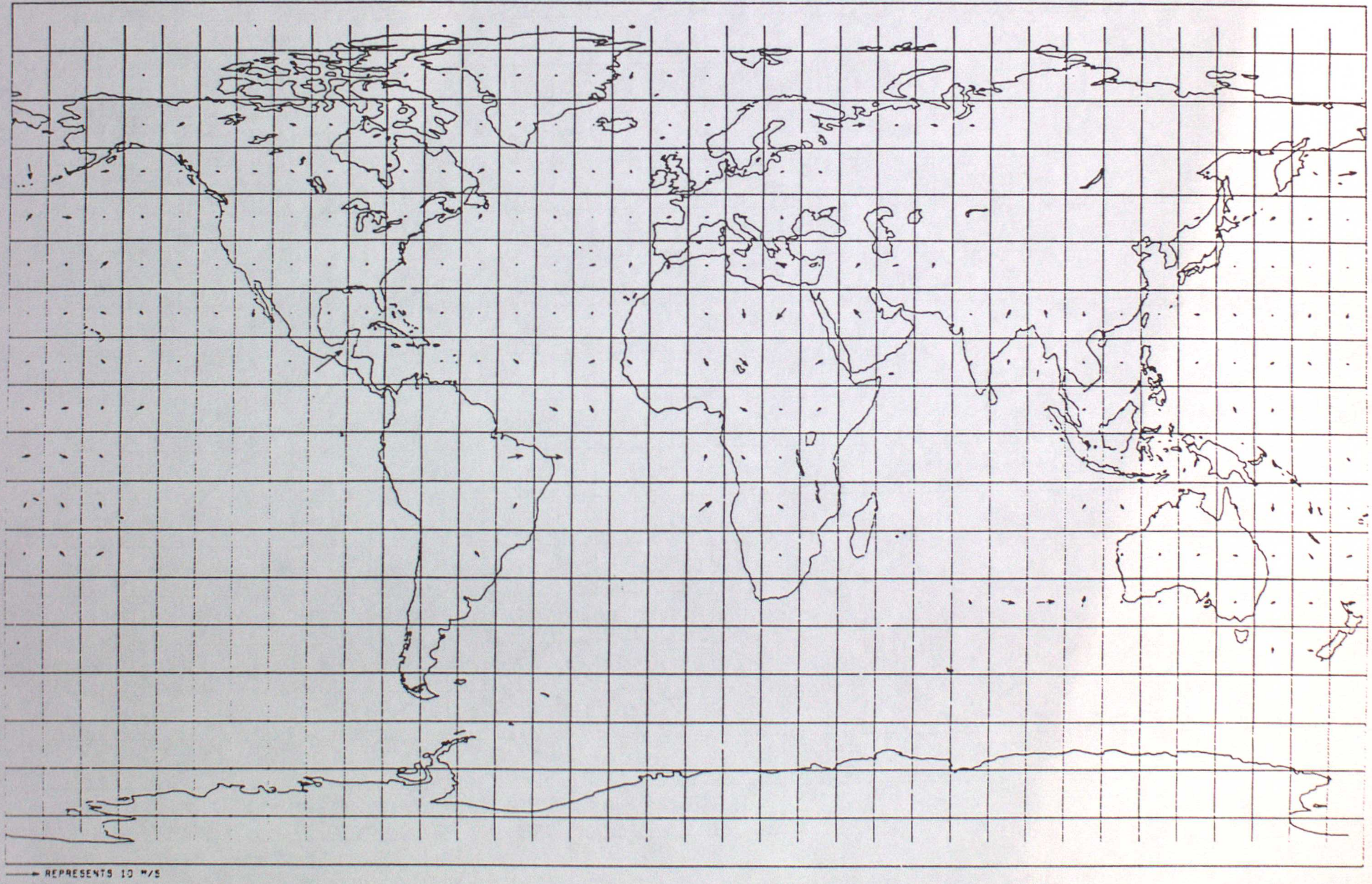
1 5 10 41 77 37 17 16 7 4 12 18 39 122 144 152 173 23 4 2 0 0 0 0 0 0 0 1 2 0 1 1
38 40 39 39 62 222 275 470 557 325 49 67 76 71 86 15 20 24 27 0 0 1 0 0 0 1 1 5 48 59 35
25 9 5 14 77 196 522 412 267 242 145 16 26 34 39 13 19 1 12 3 21 24 1 1 0 0 1 58 89 77 34
24 48 89 90 26 3 12 66 61 93 31 28 23 23 9 5 3 0 9 3 1 5 6 27 21 10 3 2 5 14 31 23 6 17 20
2 5 3 3 1 0 0 5 7 0 6 12 1 1 4 2 0 2 10 3 1 5 9 13 7 19 1 4 13 4 5 2
3 4 5 3 0 0 1 1 1 1 2 1 0 0 4 2 1 2 9 2 3 0 0 1 3 14 2 4 1 8 2 0 0
18 15 4 1 0 0 0 0 1 3 1 1 2 2 8 2 0 1 1 2 20 15 1 12
18 5 1 0 0 3 1 0 0 1 1 9 1 0 3 29 27 4 46 2 14 20
9 3 1 0 0 0 0 2 1 0 0 0 7 1 0 0 0 0 0 32 25 68 126 168 34 22
1 1 0 0 2 0 0 0 2 1 1 1 1 1 1 1 1 2 2 14 28 64 408 211 71 10
0 0 0 0 0 0 0 0 0 0 0 0 0 1 2 13 2
0 0
0

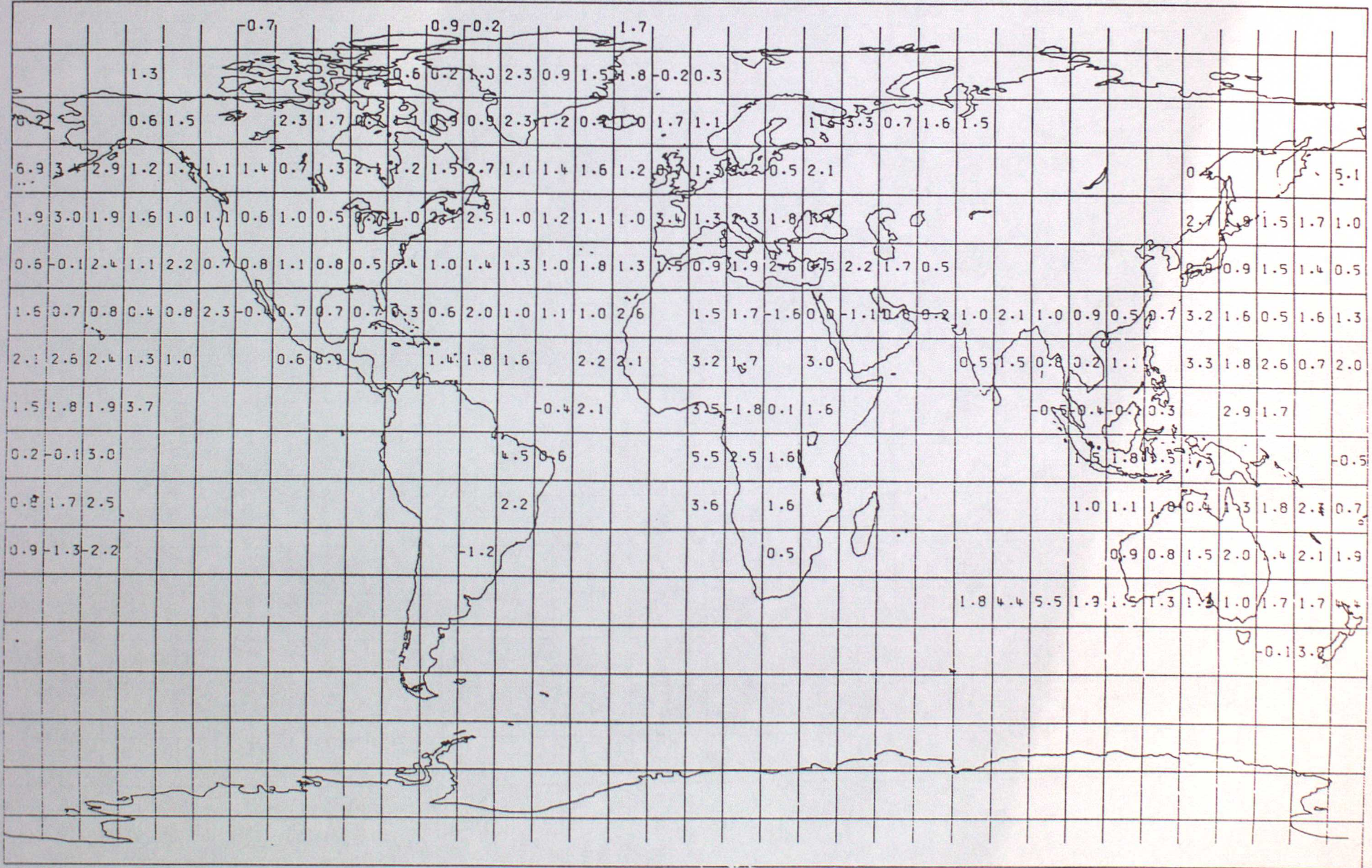
AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA FIGURE 4
MAY 1994
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



AIRCRAFT MEAN O-B WINDS BETWEEN 70 AND 500 HPA FIGURE 5
MAY 1994
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



AIRCRAFT : MEAN O-B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6
MAY 1994
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT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1.3 0.6 0.2 2.3 0.9 1.5 1.8 -0.2 0.3
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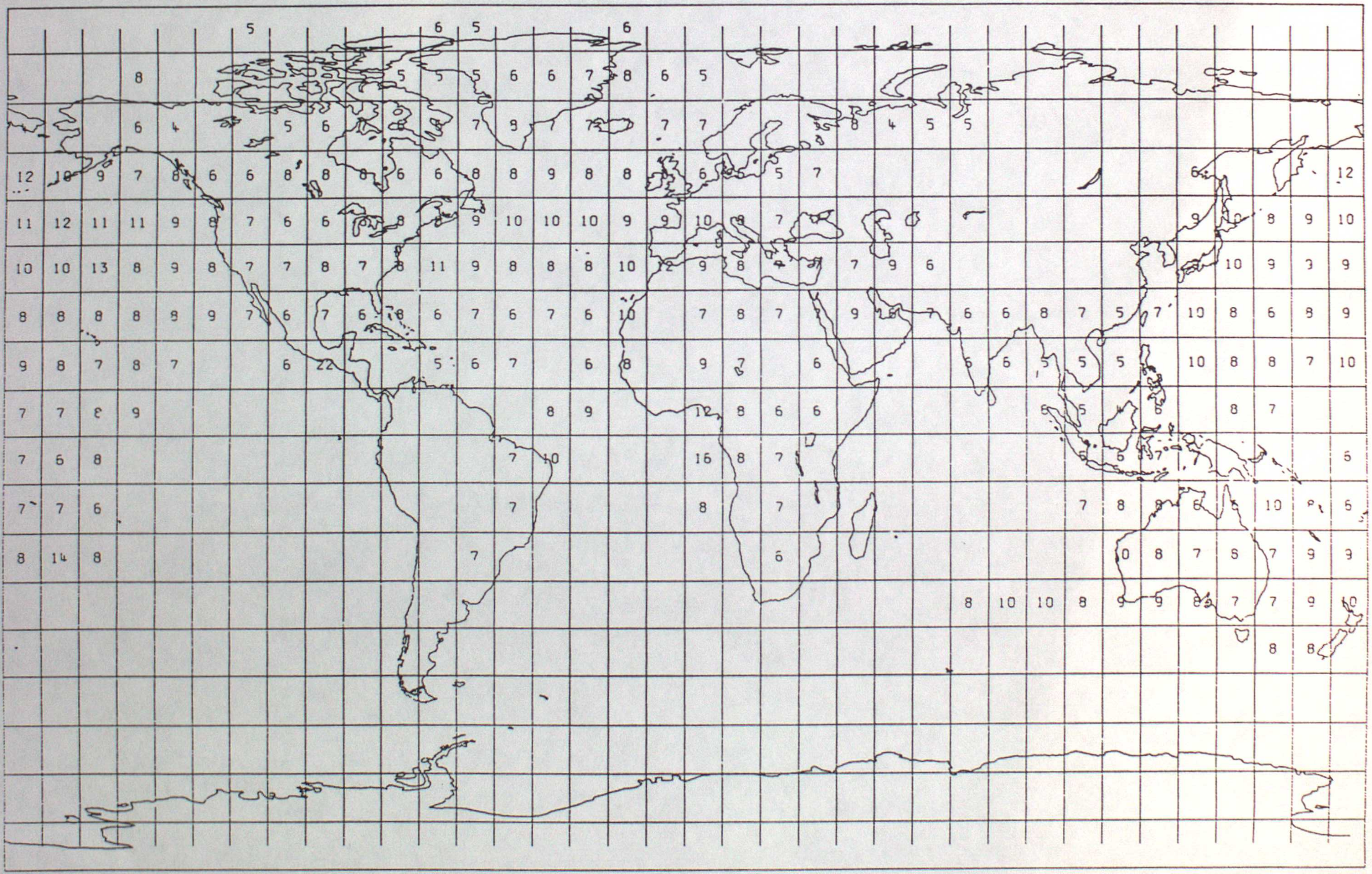
6.9 3.4 2.9 1.2 1.1 1.4 0.7 1.3 1.2 1.5 2.7 1.1 1.4 1.6 1.2 1.3 0.5 2.1 0.4 5.1
1.9 3.0 1.9 1.6 1.0 1.1 0.6 1.0 0.5 1.0 2.5 1.0 1.2 1.1 1.0 3.4 1.3 3 1.8 2.7 1.5 1.7 1.0
0.6 -0.1 2.4 1.1 2.2 0.7 0.8 1.1 0.8 0.5 1.0 1.4 1.3 1.0 1.8 1.3 1.5 0.9 1.9 0.5 2.2 1.7 0.5 0.9 1.5 1.4 0.5
1.6 0.7 0.8 0.4 0.8 2.3 0.7 0.7 0.7 0.3 0.6 2.0 1.0 1.1 1.0 2.6 1.5 1.7 -1.6 -1.1 1.0 2.1 1.0 0.9 0.5 0.7 3.2 1.6 0.5 1.6 1.3
2.1 2.6 2.4 1.3 1.0 0.6 8.9 1.4 1.8 1.6 2.2 2.1 3.2 1.7 3.0 0.5 1.5 0.8 0.2 3.3 1.8 2.6 0.7 2.0
1.5 1.8 1.9 3.7 -0.4 2.1 3.5 -1.8 0.1 1.6 -0.5 0.4 0.3 2.9 1.7
0.2 -0.1 3.0 4.5 0.6 5.5 2.5 1.6 1.5 1.8 1.5 -0.5
0.8 1.7 2.5 2.2 3.6 1.6 1.0 1.1 1.0 0.4 1.3 1.8 2.1 0.7
0.9 -1.3 -2.2 -1.2 0.5 0.9 0.8 1.5 2.0 1.4 2.1 1.9
1.8 4.4 5.5 1.3 1.5 1.3 1.3 1.0 1.7 1.7 4.4
-0.1 3.2

AIRCRAFT : RMS O-B VECTOR (M/S) BETWEEN 70 AND 500 HPA FIGURE 7
MAY 1994
OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT


5 6 5 6
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6 4 5 6 8 7 9 7 7 7 7 8 4 5 5
12 10 9 7 8 6 6 8 8 8 6 6 8 8 9 8 8 6 5 7 6 12
11 12 11 11 9 8 7 6 6 8 9 10 10 10 9 9 10 8 7 9 10 8 9 10
10 10 13 8 9 8 7 7 8 7 8 11 9 8 8 8 10 12 9 8 7 7 9 6 10 9 9 9
8 8 8 8 8 9 7 6 7 6 8 6 7 6 7 6 10 7 8 7 7 9 8 7 6 6 8 7 5 7 10 8 6 8 9
9 8 7 8 7 6 22 5 6 7 6 8 9 7 6 6 6 5 5 5 10 8 8 7 10
7 7 8 9 8 9 12 8 6 6 6 5 6 8 7
7 6 8 7 10 16 8 7 6 6 7 5
7 7 6 7 8 7 7 8 8 6 6 10 6
8 14 8 7 6 0 8 7 8 7 9 9
8 10 10 8 9 9 8 7 7 9 10
8 8

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 30.0 hPa

Element monitored :GEOPOTENTIAL HEIGHT IN metres

Parameters monitored

:NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:SD :SD of difference of observations from background values at level shown excluding those with gross errors.

:BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

:NUM LEVELS :Number of levels satisfying selection criteria.

GROSS ERROR LIMITS :Defined in Appendix I.1

SELECTION CRITERIA :≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
22271	12	Z	100	68/ 44	17	0	63.5	91.1	111.1	4
22522	00	Z	200	65/ 35	31	0	73.8	-37.9	83.0	4
23418	12	Z	250	65/ 57	18	1	32.9	90.6	96.3	9
27947	12	Z	200	53/ 41	15	0	30.1	80.8	86.2	5
31004	00	Z	70	59/ 125	17	0	40.8	115.9	122.9	5
31004	12	Z	400	59/ 125	22	0	24.0	52.4	57.6	4
31168	00	Z	250	56/ 138	28	0	42.0	72.4	83.7	8
37985	00	Z	200	39/ 49	16	1	42.1	97.6	106.3	4
38507	00	Z	200	40/ 53	25	0	49.9	75.3	90.3	5
42027	00	Z	30	34/ 75	6	5	151.9	295.0	331.8	8
42027	12	Z	150	34/ 75	11	0	99.7	156.5	185.5	6
42101	12	Z	150	30/ 76	12	0	140.7	70.9	157.6	4
42182	00	Z	30	29/ 77	16	1	149.3	178.7	232.9	4
42182	12	Z	70	29/ 77	22	2	155.1	159.7	222.6	8
42314	00	Z	150	27/ 95	13	0	113.0	30.2	117.0	7
42339	00	Z	250	26/ 73	14	1	120.1	40.3	126.7	7
42339	12	Z	70	26/ 73	9	1	139.3	216.3	257.3	6
42361	00	Z	30	26/ 78	14	2	190.0	151.1	242.8	8
42361	12	Z	70	26/ 78	9	3	187.3	153.9	242.4	7
42369	00	Z	100	27/ 81	11	4	69.9	208.3	219.7	6
42369	12	Z	150	27/ 81	16	2	94.1	136.3	165.7	7
42379	00	Z	50	27/ 83	16	1	184.4	125.6	223.1	11
42379	12	Z	70	27/ 83	12	1	177.6	138.5	225.2	8
42397	00	Z	200	27/ 88	14	0	91.1	5.2	91.2	5
42410	00	Z	30	26/ 92	16	1	178.3	152.7	234.8	6
42410	12	Z	70	26/ 92	15	2	183.3	85.1	202.1	10
42492	00	Z	70	26/ 85	13	3	177.0	100.2	203.4	7
42492	12	Z	150	26/ 85	15	1	133.2	41.0	139.4	5
42647	00	Z	100	23/ 73	13	0	175.0	22.2	176.4	7
42647	12	Z	150	23/ 73	14	2	134.6	94.2	164.3	10
42667	12	Z	250	23/ 77	12	0	95.7	81.5	125.7	5
42701	00	Z	30	23/ 85	10	0	201.0	149.3	250.4	8
42724	00	Z	50	24/ 91	11	0	131.8	237.5	271.6	6
42809	00	Z	70	23/ 88	20	1	151.3	137.6	204.6	8
42809	12	Z	50	23/ 88	13	0	134.7	157.8	207.5	7
42867	00	Z	30	21/ 79	13	1	157.7	133.5	206.6	5
42867	12	Z	50	21/ 79	11	0	144.3	137.3	199.2	9
42875	00	Z	30	21/ 82	9	1	233.6	187.8	299.7	5
42875	12	Z	30	21/ 82	7	5	179.8	245.9	304.6	8
42971	00	Z	70	20/ 86	20	2	165.7	86.7	187.0	8
42971	12	Z	30	20/ 86	17	4	121.1	236.3	265.5	8
43003	00	Z	70	19/ 73	15	2	165.1	-90.5	188.3	8
43003	12	Z	50	19/ 73	8	2	215.7	-59.0	223.7	9
43014	00	Z	70	20/ 75	9	1	191.2	111.3	221.2	6
43014	12	Z	200	20/ 75	19	0	69.9	74.1	101.9	5
43128	00	Z	100	17/ 78	24	0	161.8	-67.4	175.3	9
43128	12	Z	50	17/ 78	8	4	115.4	215.4	244.3	9
43185	00	Z	50	16/ 81	11	4	167.0	189.7	252.7	10
43185	12	Z	100	16/ 81	13	3	144.3	102.9	177.3	7
43192	00	Z	70	15/ 74	11	0	144.1	-106.0	178.9	4
43192	12	Z	70	15/ 74	11	0	153.5	71.5	169.3	6
43279	00	Z	50	13/ 80	14	1	154.9	114.5	192.6	5
43279	12	Z	200	13/ 80	19	0	99.0	33.2	104.4	8
43285	00	Z	50	13/ 75	17	0	171.7	35.8	175.4	5
43285	12	Z	50	13/ 75	15	2	145.9	192.0	241.1	10
43295	00	Z	70	13/ 78	10	0	67.5	199.0	210.2	5
43295	12	Z	100	13/ 78	10	1	58.0	166.5	176.3	5
43311	00	Z	200	11/ 73	15	0	109.5	-77.2	134.0	5
43346	00	Z	100	11/ 80	22	0	153.8	-43.3	159.8	8
43346	12	Z	100	11/ 80	18	0	139.8	68.9	155.9	8

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
43353	00	Z	100	10/ 76	16	0	136.9	31.1	140.4	7
43353	12	Z	100	10/ 76	11	1	120.5	108.1	161.8	7
43369	00	Z	70	8/ 73	14	2	158.2	-94.9	184.5	9
43369	12	Z	50	8/ 73	10	2	232.0	-43.7	236.0	8
43371	00	Z	200	8/ 77	24	0	98.5	-81.2	127.7	9
43371	12	Z	70	8/ 77	18	3	181.0	46.7	186.9	8
44231	00	Z	150	50/ 100	11	0	60.4	111.5	126.8	4
44288	00	Z	250	46/ 103	9	4	53.8	151.8	161.0	4
44373	12	Z	200	44/ 104	11	1	76.9	143.2	162.5	5
47041	00	Z	250	40/ 128	21	1	61.4	43.7	75.3	5
48820	00	Z	700	21/ 106	28	0	9.3	-42.5	43.5	4
48820	12	Z	700	21/ 106	25	0	9.8	-44.5	45.6	4
50774	00	Z	250	48/ 129	30	0	19.6	72.1	74.8	7
52267	12	Z	70	42/ 101	29	0	40.5	139.2	144.9	6
53513	12	Z	70	41/ 107	27	0	46.6	115.8	124.8	5
56080	12	Z	70	35/ 103	25	0	41.0	143.6	149.3	6
56146	12	Z	70	32/ 100	27	1	55.7	124.0	136.0	4
56691	00	Z	100	27/ 104	27	0	86.4	106.3	137.0	4
56691	12	Z	30	27/ 104	18	0	70.0	222.9	233.7	5
56739	12	Z	100	25/ 98	29	0	43.6	150.5	156.7	6
56778	00	Z	100	25/ 103	28	0	51.2	124.6	134.7	5
56778	12	Z	100	25/ 103	27	0	38.9	139.7	145.1	5
56964	12	Z	100	23/ 101	26	0	45.7	127.4	135.3	5
56985	12	Z	100	23/ 103	27	0	40.2	135.3	141.2	5
57447	00	Z	100	30/ 109	18	0	40.5	110.6	117.7	4
57447	12	Z	100	30/ 109	14	0	47.5	117.4	126.7	4
57494	00	Z	100	31/ 114	26	0	41.2	107.3	114.9	4
57679	00	Z	70	28/ 113	23	0	46.9	173.1	179.4	7
57679	12	Z	100	28/ 113	23	0	32.3	143.6	147.2	6
57957	00	Z	100	25/ 110	27	0	46.1	141.0	148.4	6
57957	12	Z	100	25/ 110	27	0	42.9	135.3	141.9	6
58150	00	Z	100	34/ 120	30	0	77.0	90.8	119.0	4
58203	00	Z	150	33/ 116	29	0	30.5	106.2	110.5	8
58203	12	Z	200	33/ 116	27	0	29.8	80.5	85.8	4
58238	00	Z	150	32/ 119	27	0	33.4	118.9	123.5	7
58238	12	Z	100	32/ 119	26	0	51.5	114.0	125.1	4
58424	00	Z	70	31/ 117	25	0	41.6	165.7	170.8	8
58424	12	Z	150	31/ 117	28	0	23.9	96.5	99.4	5
58457	00	Z	100	30/ 120	30	0	43.0	111.7	119.7	4
58665	00	Z	30	29/ 121	18	0	71.1	206.9	218.8	7
58665	12	Z	100	29/ 121	23	0	68.9	102.9	123.8	6
58847	00	Z	100	26/ 119	28	0	53.2	108.8	121.1	5
59287	00	Z	100	23/ 113	28	0	44.9	132.1	139.6	5
59287	12	Z	70	23/ 113	23	0	83.6	149.1	170.9	5
59316	12	Z	100	23/ 117	25	0	45.0	129.6	137.2	4
59981	12	Z	100	17/ 112	27	0	39.3	140.5	145.9	4
60360	12	Z	400	37/ 8	1	17	0.0	-167.0	167.0	6
62306	12	Z	100	31/ 27	14	3	45.2	241.6	245.8	7
62378	12	Z	70	30/ 31	10	0	99.3	257.4	275.9	5
70414	00	Z	70	53/ 174	13	1	57.0	170.5	179.7	6
82965	12	Z	30	-10/ -56	23	0	125.1	147.1	193.1	5
89009	00	Z	250	-90/ 0	14	0	84.5	-0.2	84.5	4
89664	00	Z	400	-78/ 167	12	0	64.1	-13.5	65.5	4
91557	12	Z	700	-18/ 168	17	11	16.8	-84.2	85.9	8
97014	00	Z	150	2/ 125	23	0	49.5	-116.3	126.4	7

AVAILABILITY - TEMP - 500 HPA GEOPOTENTIAL - MAY 1994 FIGURE 8
ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS - 1421

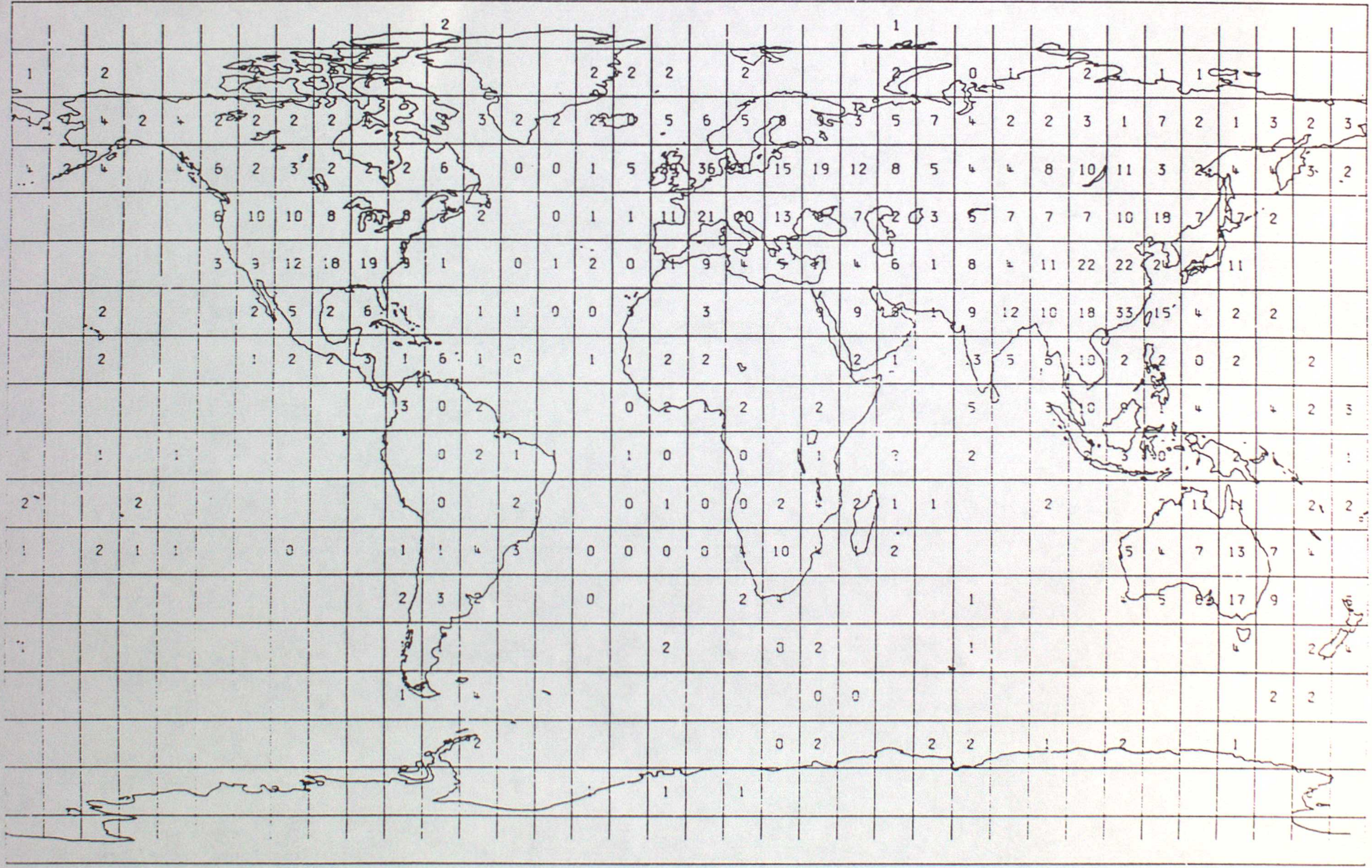


TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 1000.0 - 100.0 hPa

Element monitored :VECTOR WIND in $m\ s^{-1}$

Parameters monitored

:NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS :Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

:NUM LEVELS :Number of levels satisfying selection criteria.

GROSS ERROR LIMITS :Defined in Appendix I.2

SELECTION CRITERIA :$\geq$ 10 observations and $\geq$ 15 $m\ s^{-1}$ RMS vector wind.

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
42701	00	V	250	23/ 85	16	0	6	4.6	-1.0	16.0	1
68461	12	V	150	-28/ 28	25	0	8	9.1	-6.4	15.7	1
82599	12	V	150	-6/ -35	12	0	25	0.7	4.0	17.7	1
83780	00	V	150	-24/ -47	15	0	6	8.3	-1.7	15.9	1
87047	12	V	100	-25/ -65	22	0	4	10.5	1.4	16.4	1

AVAILABILITY - TEMP/PILOT - 300 HPA WIND - MAY 1994 FIGURE 9
ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS - 1270

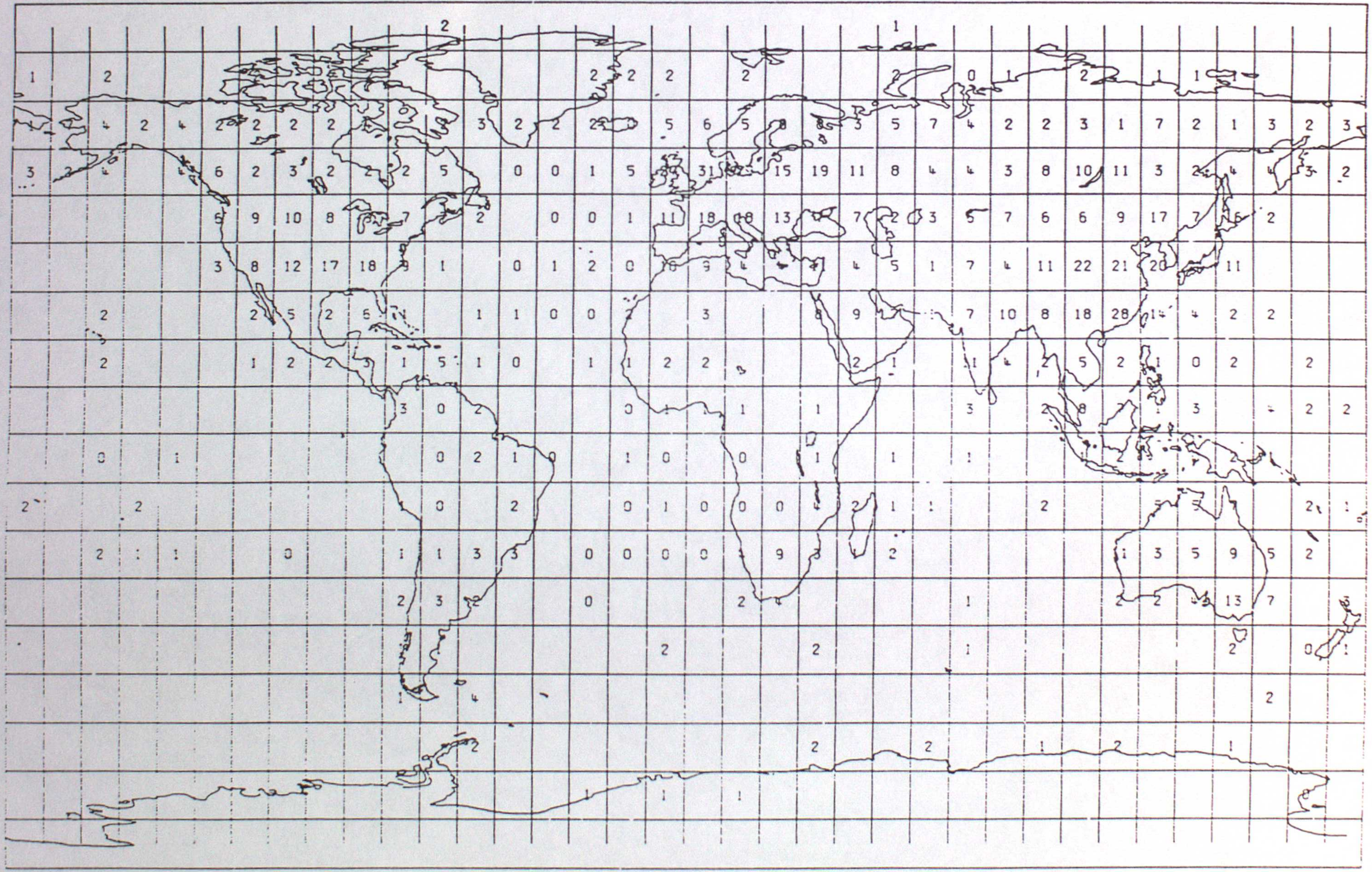


TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 500.0 - 150.0 hPa

Element monitored :WIND DIRECTION in degrees

Parameters monitored

:NUM OBS :Average number of observations at all levels.

:BIAS :Mean difference of observations from background values from all levels.

:MAX SPREAD :(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels

:SD :SD of difference of observations from background values at all levels.

SELECTION CRITERIA :NUM OBS ≥ 5, and

ABSOLUTE BIAS ≥ 10°, with
SD < 30°, and
MAX SPREAD < 10°

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
17280	00	DD	38/ 40	28	-13.4	3.7	14.3
17280	12	DD	38/ 40	25	-12.2	2.6	11.7
24641	00	DD	64/ 122	20	11.8	5.7	15.7
24641	12	DD	64/ 122	21	12.4	4.9	14.0
25399	12	DD	66/-170	20	11.9	3.3	14.2
33317	00	DD	50/ 27	21	-11.4	8.5	15.1
40179	00	DD	32/ 35	29	-11.7	6.4	17.0
40265	00	DD	32/ 36	13	-13.6	9.8	23.2
41780	00	DD	25/ 67	14	16.1	9.6	24.3
42314	00	DD	27/ 95	14	-13.1	9.4	17.0
42314	12	DD	27/ 95	11	-10.7	8.0	15.0
42410	00	DD	26/ 92	18	-22.2	8.6	23.1
42724	00	DD	24/ 91	17	-18.2	8.7	23.0
42724	12	DD	24/ 91	10	-16.8	7.8	21.6
56691	12	DD	27/ 104	26	-11.6	3.3	11.0
60571	00	DD	32/ -2	16	12.8	3.0	15.7
60571	12	DD	32/ -2	20	13.0	4.4	11.7
67083	00	DD	-19/ 47	25	12.1	6.9	14.2
83780	00	DD	-24/ -47	15	12.3	2.4	15.6
83780	12	DD	-24/ -47	23	13.3	3.9	15.8
87047	12	DD	-25/ -65	22	-11.1	4.8	20.1
98646	00	DD	10/ 124	11	-10.1	9.6	25.4

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison :Background field from Bracknell global model.

Selection Criteria :number of observations > 10.

Data Extracted :Layer:701 - 1000 hPa
401 - 700 hPa
101 - 400 hPa

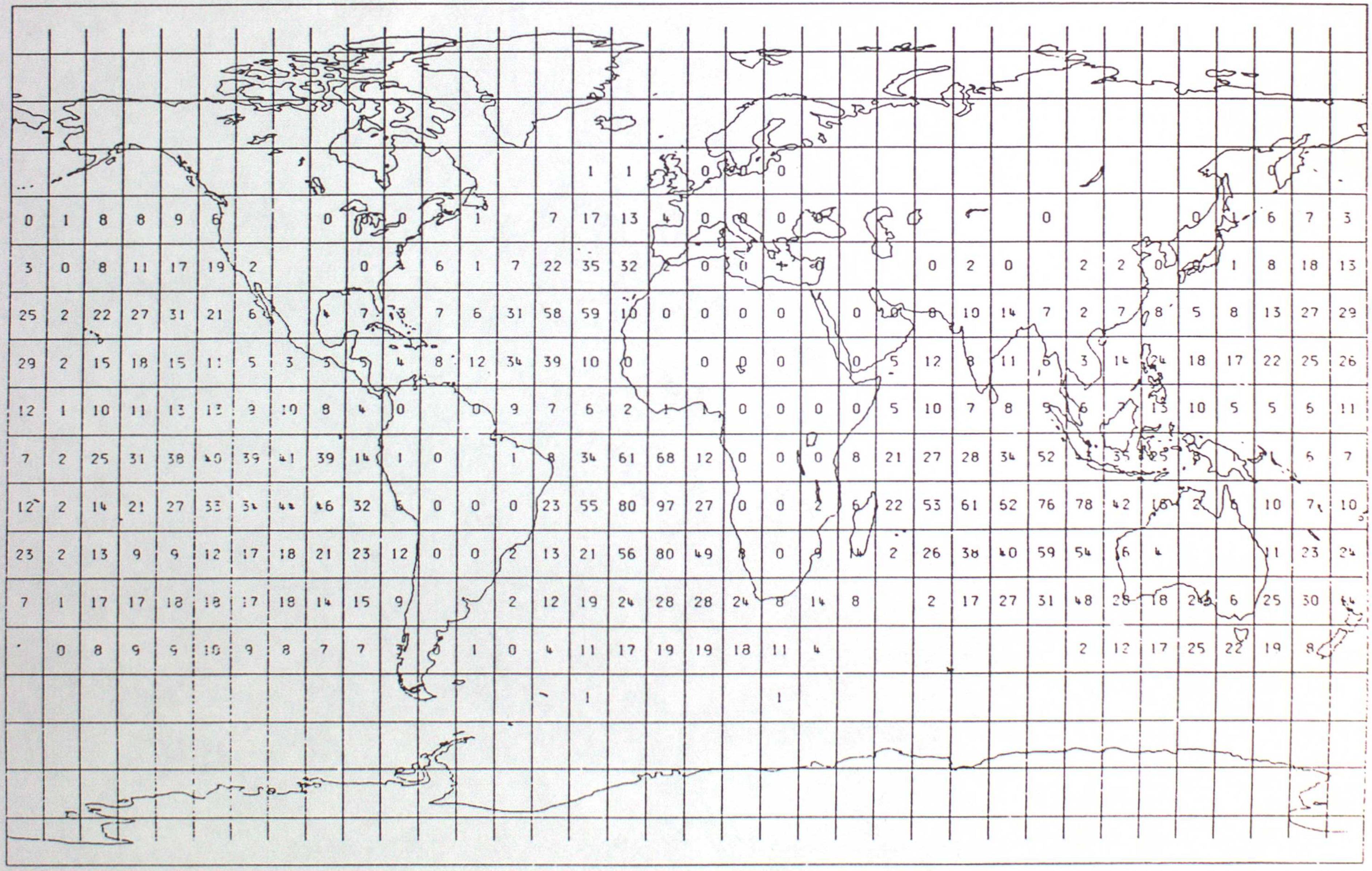
:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

:RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
MAY 1994



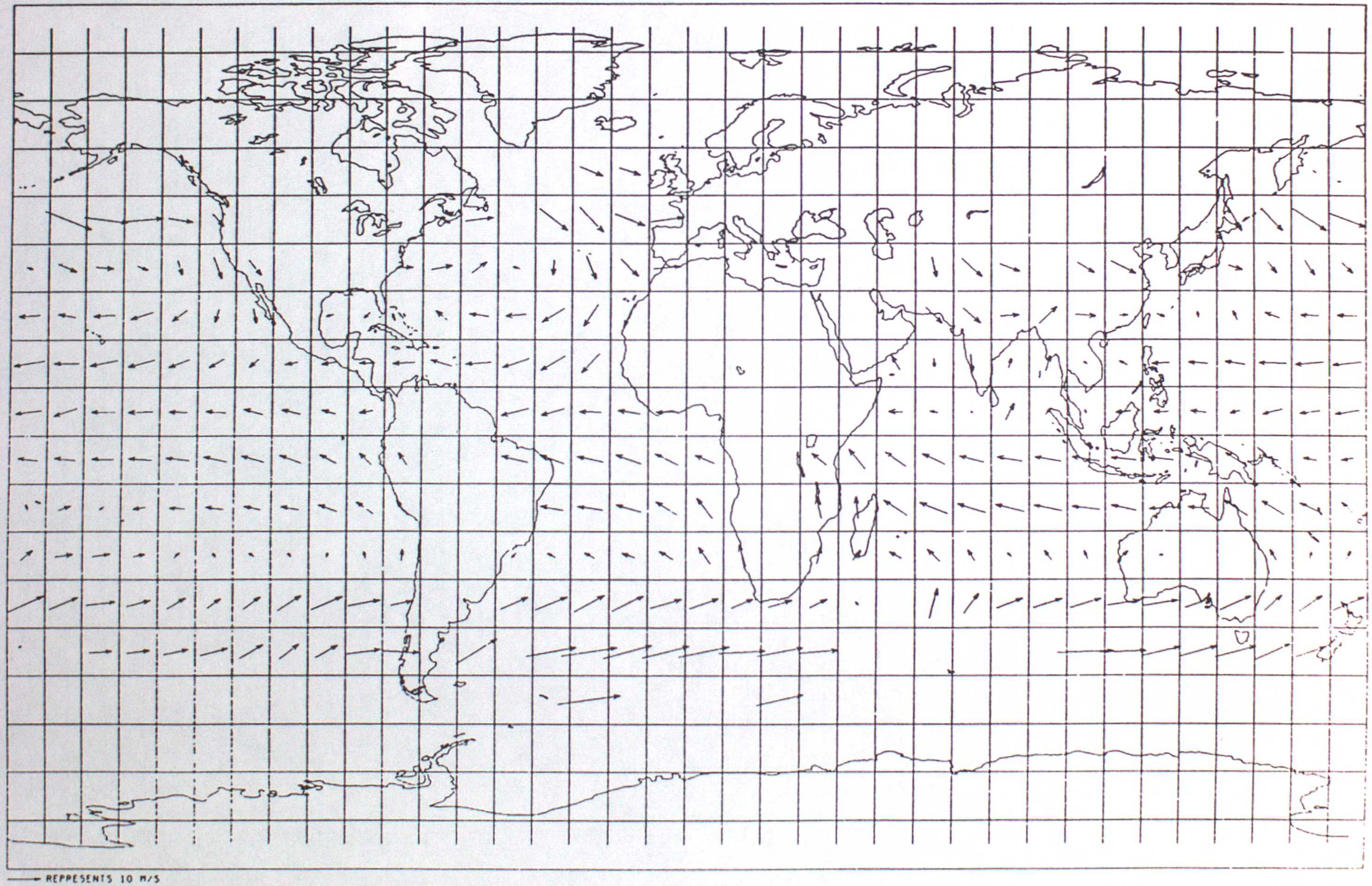
SATOB VECTOR MEAN WINDS BETWEEN 701-1000 HPA

FIGURE 11

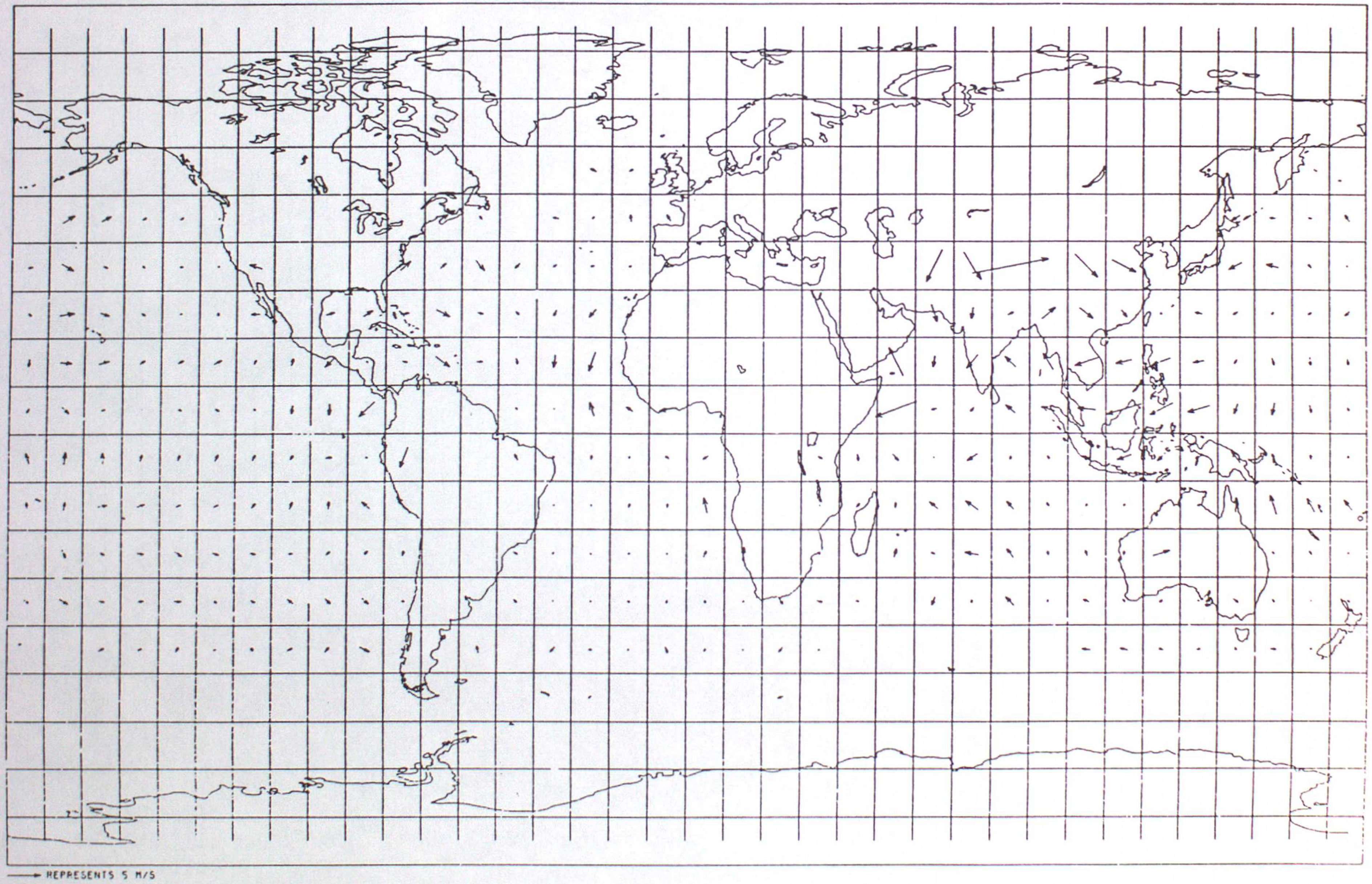
MAY 1994

ALL OBSERVATIONS

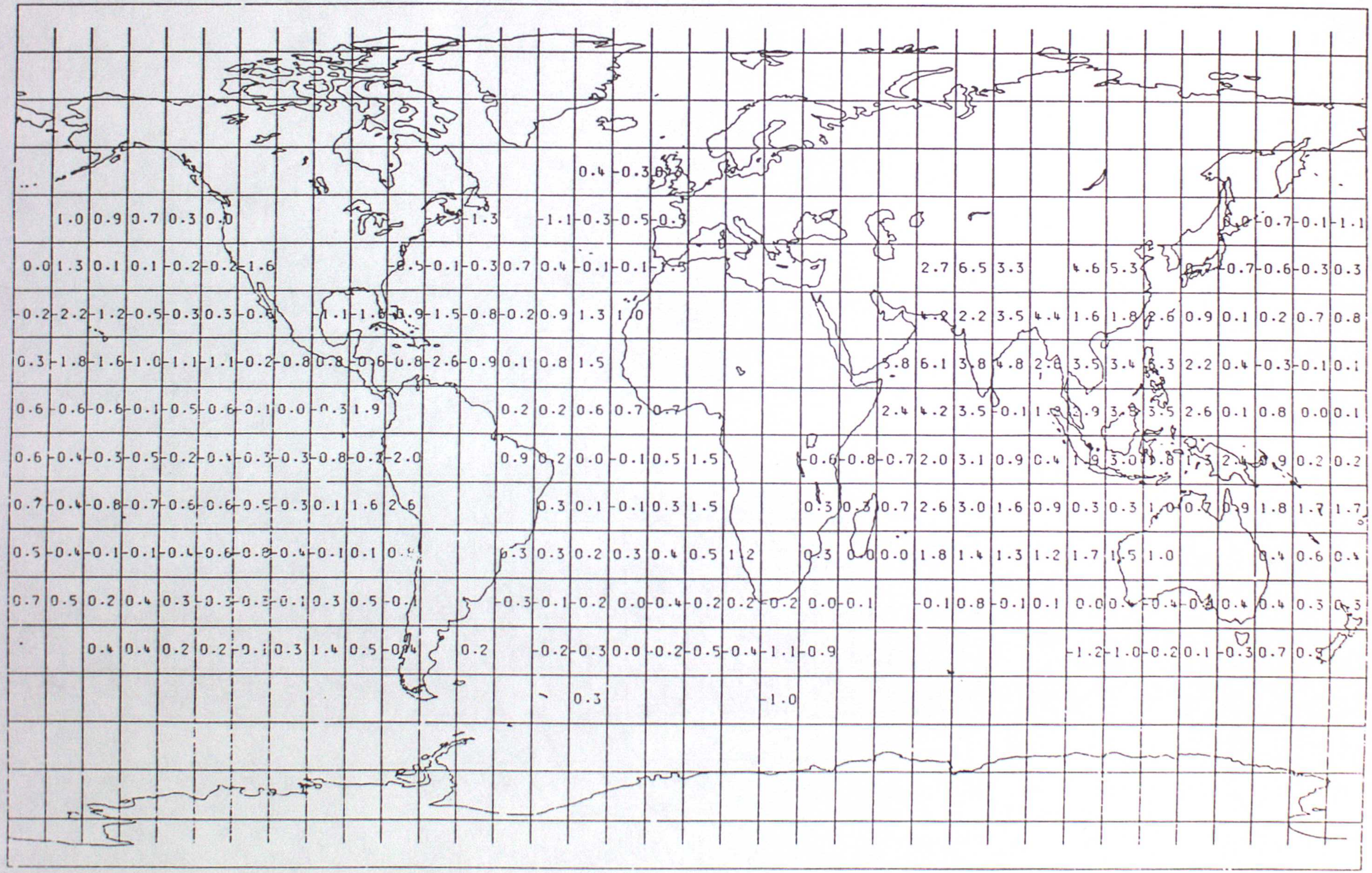
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT


REPPESENTS 10 M/S

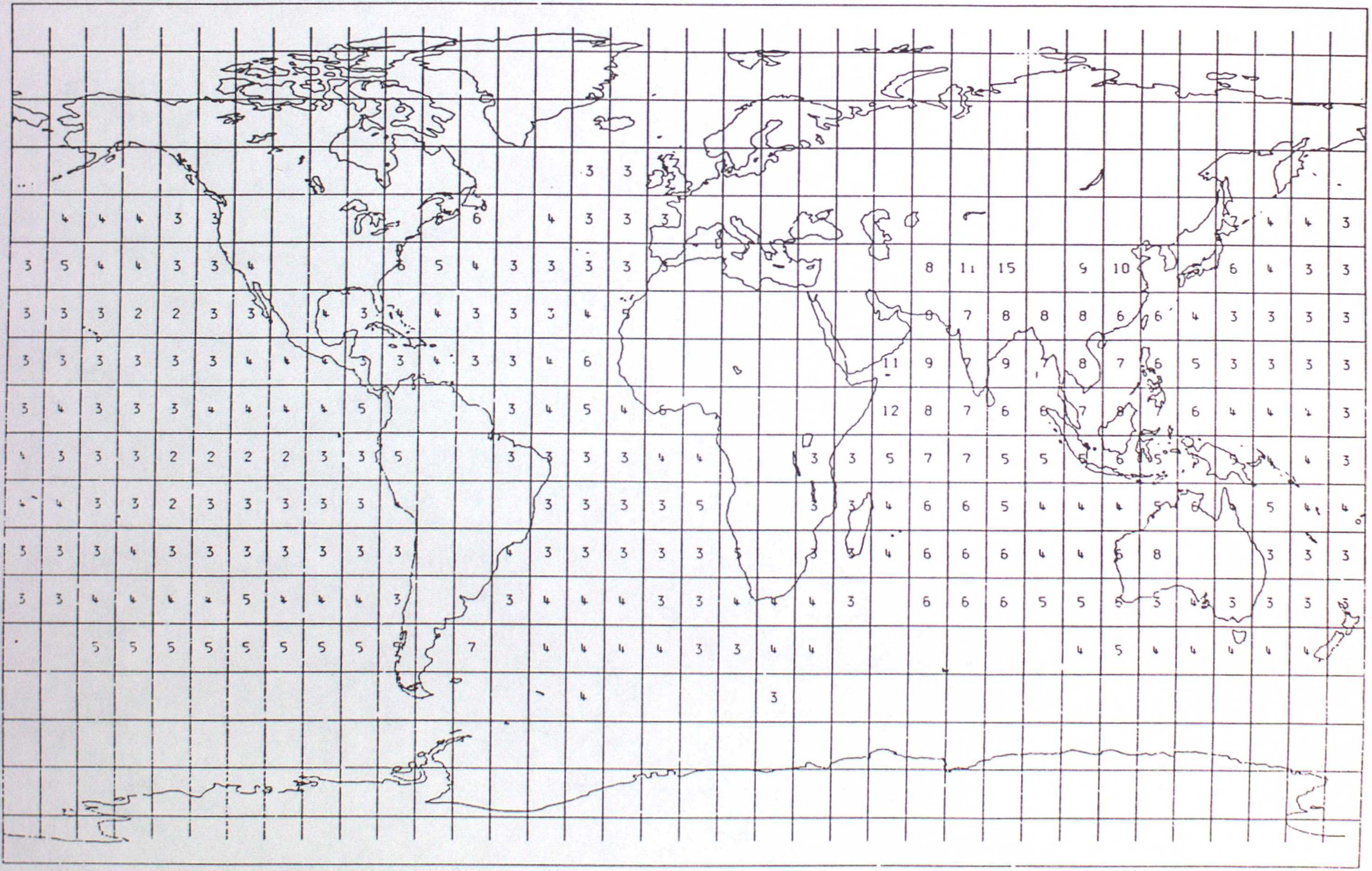
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 701-1000 HPA FIGURE 12
MAY 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT


REPRESENTS 5 M/S

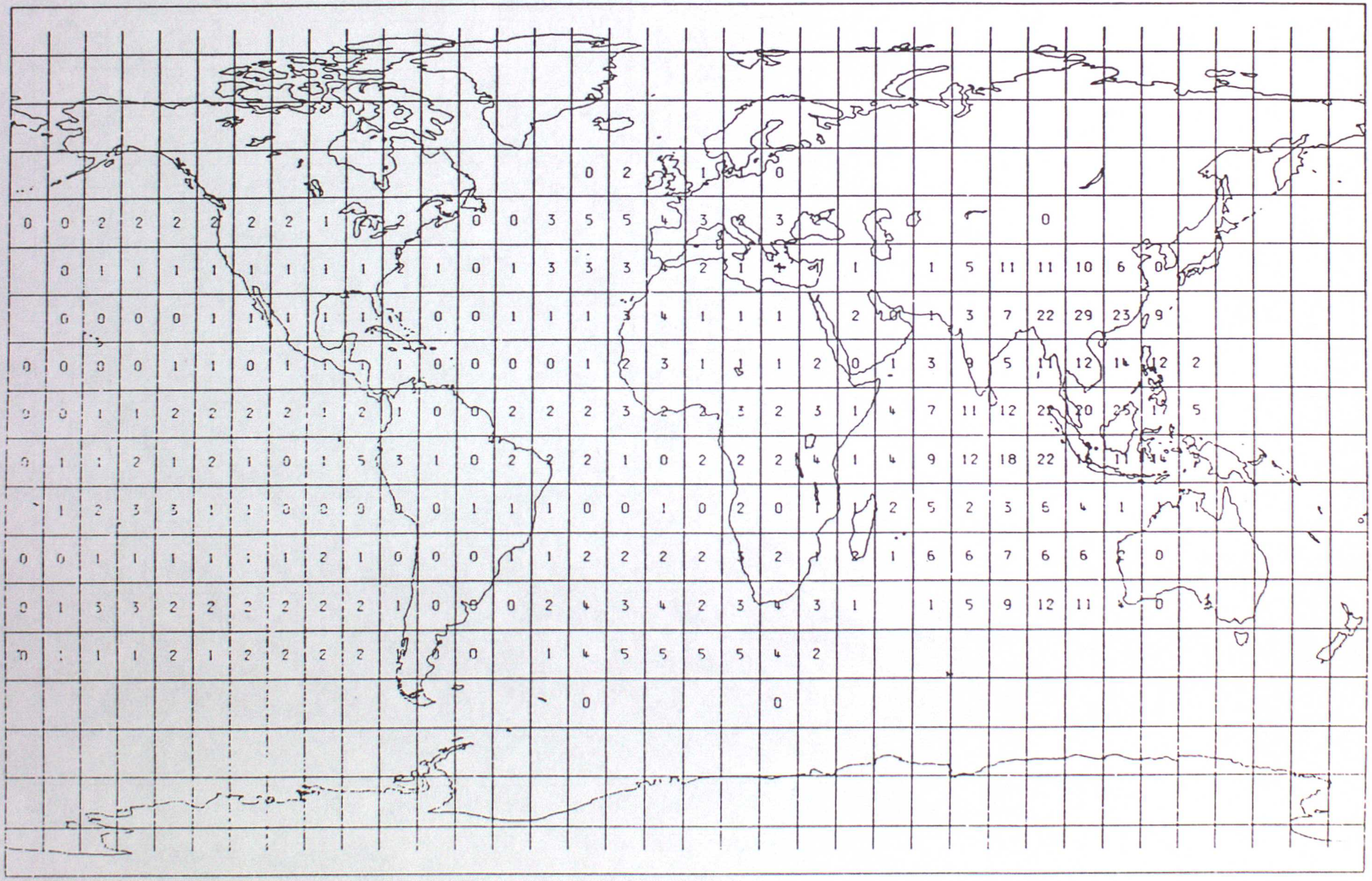
SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 13
MAY 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


0.4 -0.3
1.0 0.9 0.7 0.3 0.0 -1.3 -1.1 -0.3 -0.5 -0.5 -0.7 -0.1 -1.1
0.0 1.3 0.1 0.1 -0.2 -0.2 -1.6 -0.5 -0.1 -0.3 0.7 0.4 -0.1 -0.1 -1.5 2.7 6.5 3.3 4.6 5.3 -0.7 -0.6 -0.3 0.3
-0.2 -2.2 -1.2 -0.5 -0.3 0.3 -0.6 -1.1 -1.6 -0.9 -1.5 -0.8 -0.2 0.9 1.3 1.0 4.2 2.2 3.5 4.4 1.6 1.8 2.6 0.9 0.1 0.2 0.7 0.8
0.3 -1.8 -1.6 -1.0 -1.1 -1.1 -0.2 -0.8 0.8 -0.6 -0.8 -2.6 -0.9 0.1 0.8 1.5 5.8 6.1 3.8 4.8 2.8 3.5 3.4 5.3 2.2 0.4 -0.3 -0.1 0.1
0.6 -0.6 -0.6 -0.1 -0.5 -0.6 -0.1 0.0 -0.3 1.9 0.2 0.2 0.6 0.7 0.7 2.4 4.2 3.5 -0.1 2.9 3.5 2.6 0.1 0.8 0.0 0.1
0.6 -0.4 -0.3 -0.5 -0.2 -0.4 -0.3 -0.3 -0.8 -0.2 -2.0 0.9 0.2 0.0 -0.1 0.5 1.5 -0.6 -0.8 -0.7 2.0 3.1 0.9 0.4 1.9 3.0 1.3 2.4 0.9 0.2 0.2
0.7 -0.4 -0.8 -0.7 -0.6 -0.6 -0.5 -0.3 0.1 1.6 2.6 0.3 0.1 -0.1 0.3 1.5 0.3 0.3 0.7 2.6 3.0 1.6 0.9 0.3 0.3 1.0 0.7 0.9 1.8 1.7 1.7
0.5 -0.4 -0.1 -0.1 -0.4 -0.6 -0.8 -0.4 -0.1 0.1 0.3 0.3 0.2 0.3 0.4 0.5 1.2 0.3 0.0 0.0 1.8 1.4 1.3 1.2 1.7 1.5 1.0 0.4 0.6 0.4
0.7 0.5 0.2 0.4 0.3 -0.3 -0.3 -0.1 0.3 0.5 -0.1 -0.3 -0.1 -0.2 0.0 -0.4 -0.2 0.2 -0.2 0.0 -0.1 -0.1 0.8 -0.1 0.1 0.0 -0.4 -0.3 0.4 0.4 0.3 0.3
0.4 0.4 0.2 0.2 -0.1 0.3 1.4 0.5 -0.4 0.2 -0.2 -0.3 0.0 -0.2 -0.5 -0.4 -1.1 -0.9 -1.2 -1.0 -0.2 0.1 -0.3 0.7 0.5
0.3 -1.0

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURF 14
MAY 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

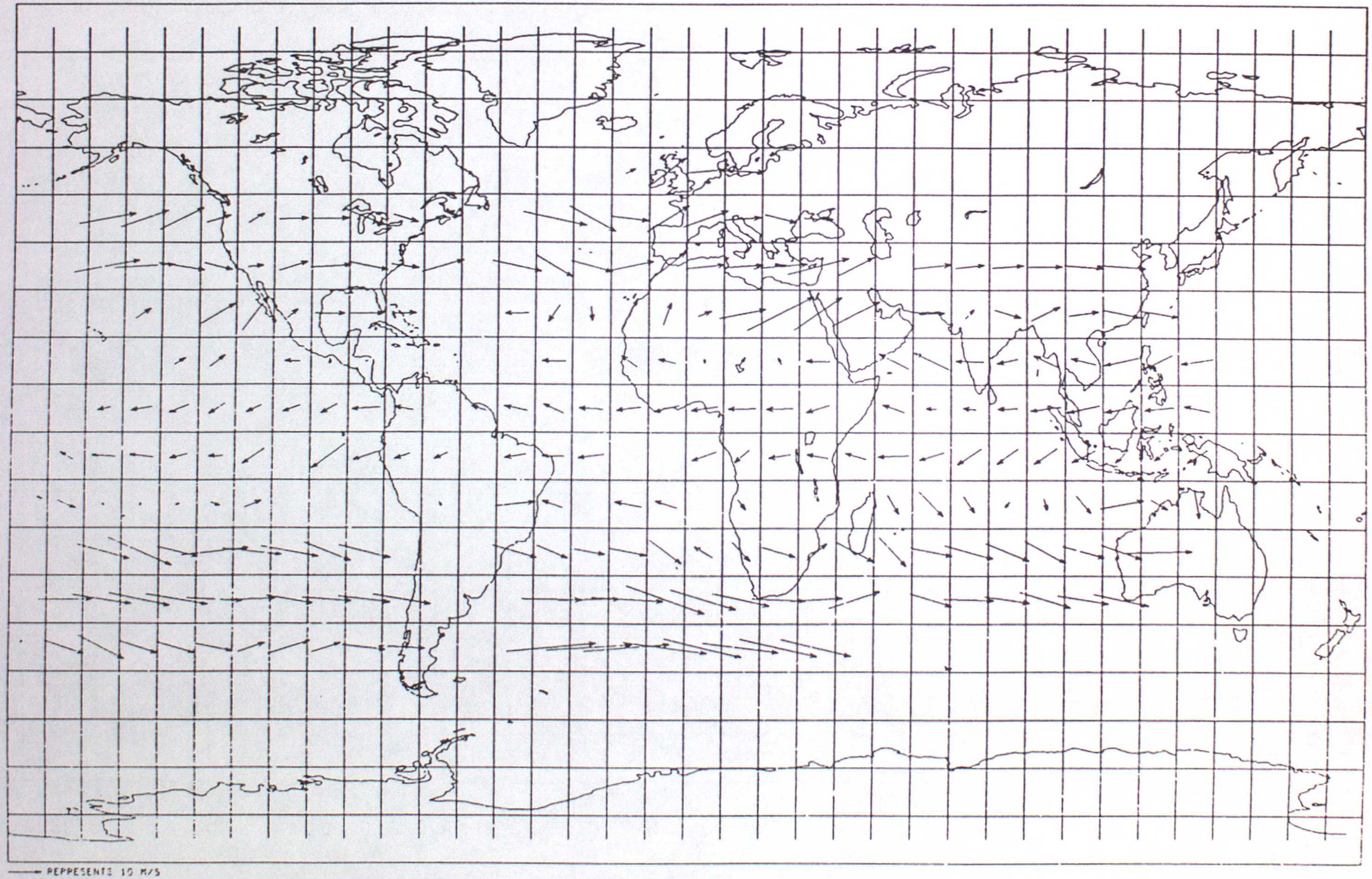

3 3
4 4 4 3 3 6 4 3 3 3 3 4 4 3
3 5 4 4 3 3 4 6 5 4 3 3 3 3 3 8 11 15 9 10 6 4 3 3
3 3 3 2 2 3 3 4 3 4 4 3 3 3 4 5 8 7 8 8 8 6 6 4 3 3 3 3
3 3 3 3 3 3 4 4 4 3 3 4 3 3 4 6 11 9 7 9 7 8 7 6 5 3 3 3 3
3 4 3 3 3 4 4 4 4 5 3 4 5 4 6 12 8 7 6 6 7 8 7 6 4 4 4 3
4 3 3 3 2 2 2 2 3 3 5 3 3 3 3 4 4 3 3 5 7 7 5 5 5 6 5 5 4 3
4 4 3 3 2 3 3 3 3 3 3 3 3 3 5 3 3 4 6 6 5 4 4 4 5 6 5 5 4 4
3 3 3 4 3 3 3 3 3 3 3 4 3 3 3 3 3 5 3 3 4 6 6 6 4 4 5 8 3 3 3
3 3 4 4 4 4 5 4 4 4 3 3 4 4 4 3 3 4 4 4 3 6 6 6 5 5 5 3 4 3 3 3 3
5 5 5 5 5 5 5 5 7 4 4 4 4 3 3 4 4 4 5 4 4 4 4 4
4 3

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
MAY 1994



SATOB VECTOR MEAN WINDS BETWEEN 401-700 HPA
MAY 1994
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 16


REPRESENTS 10 M/S

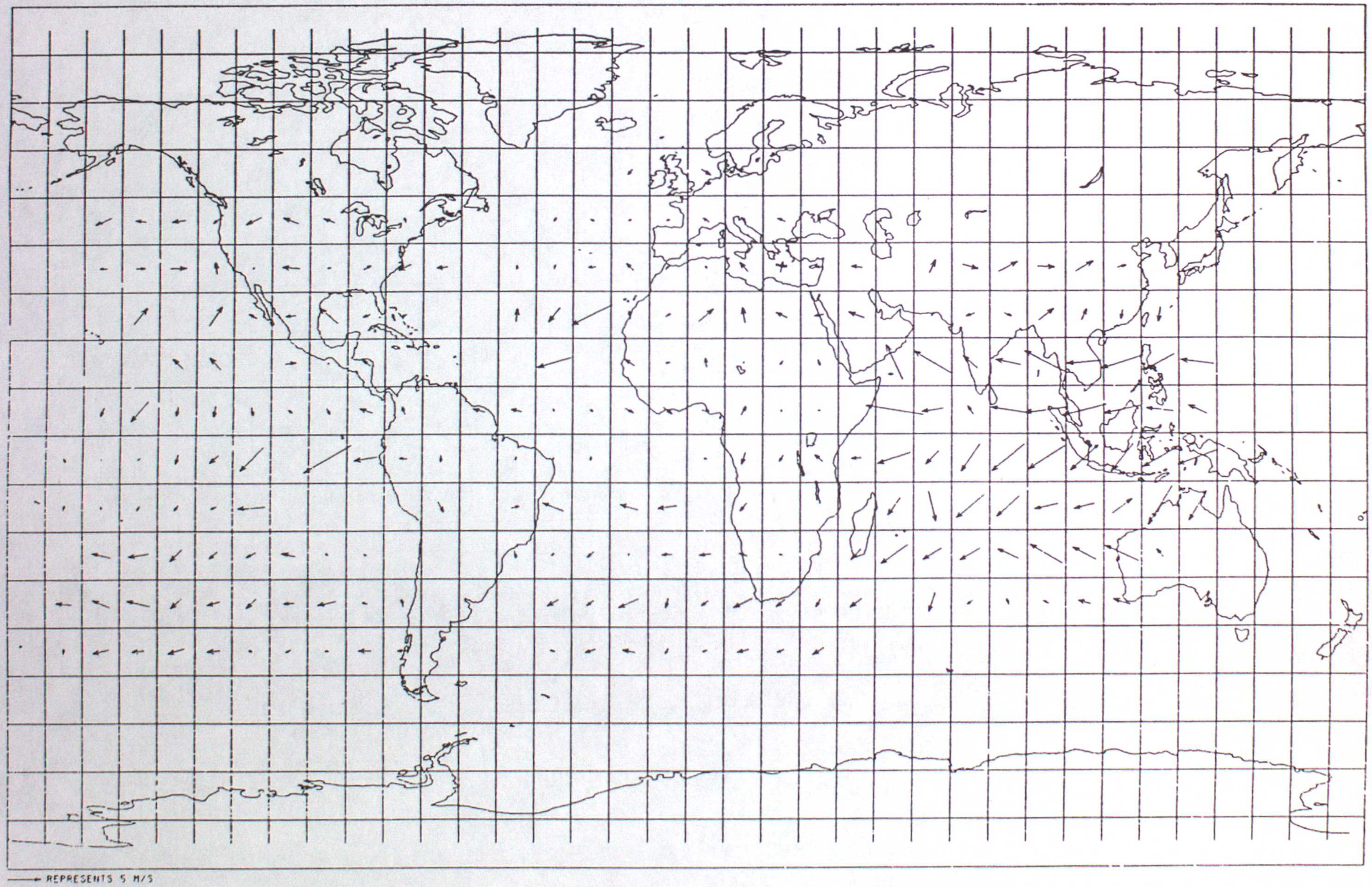
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 401-700 HPA

MAY 1994

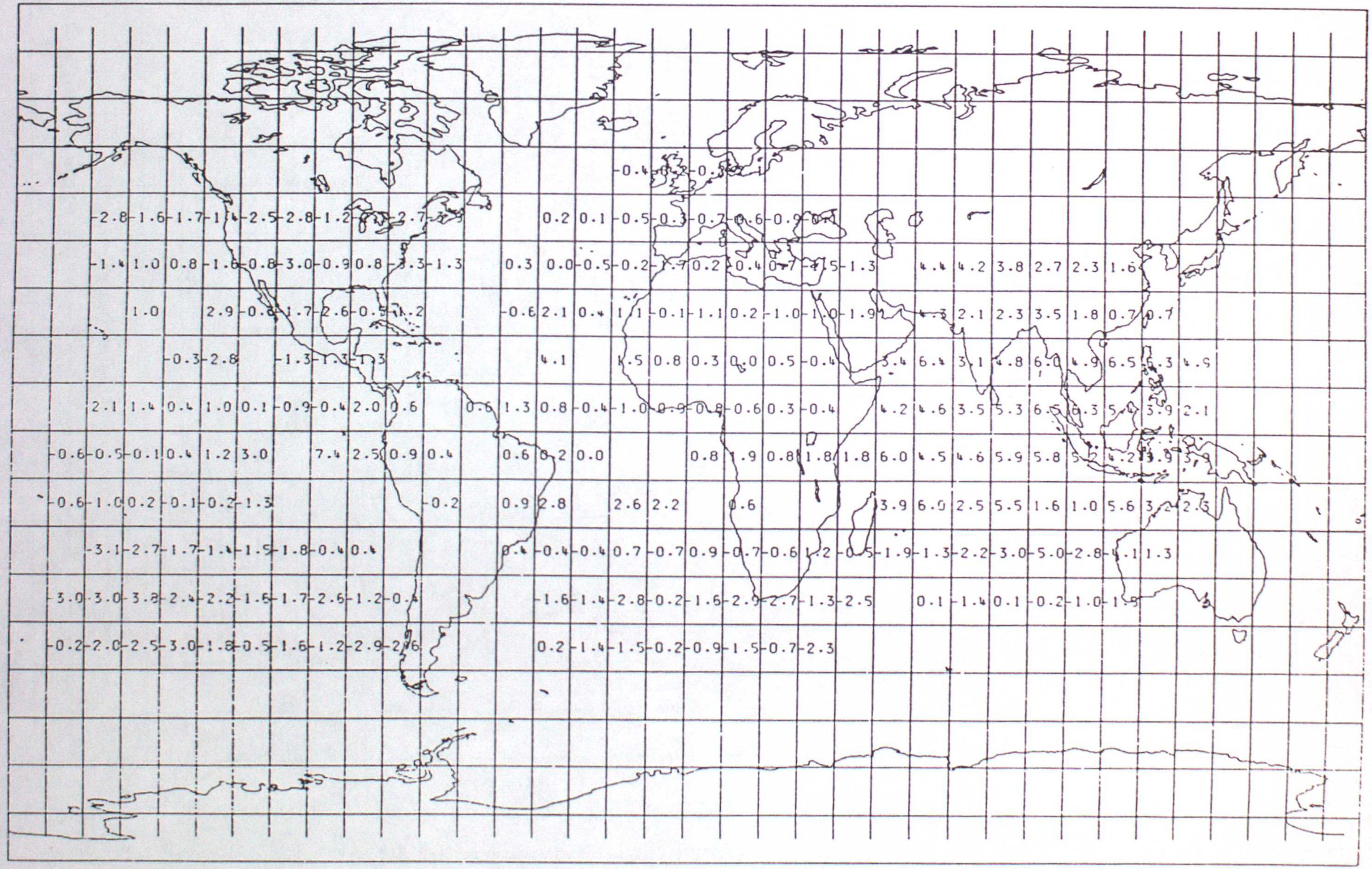
ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

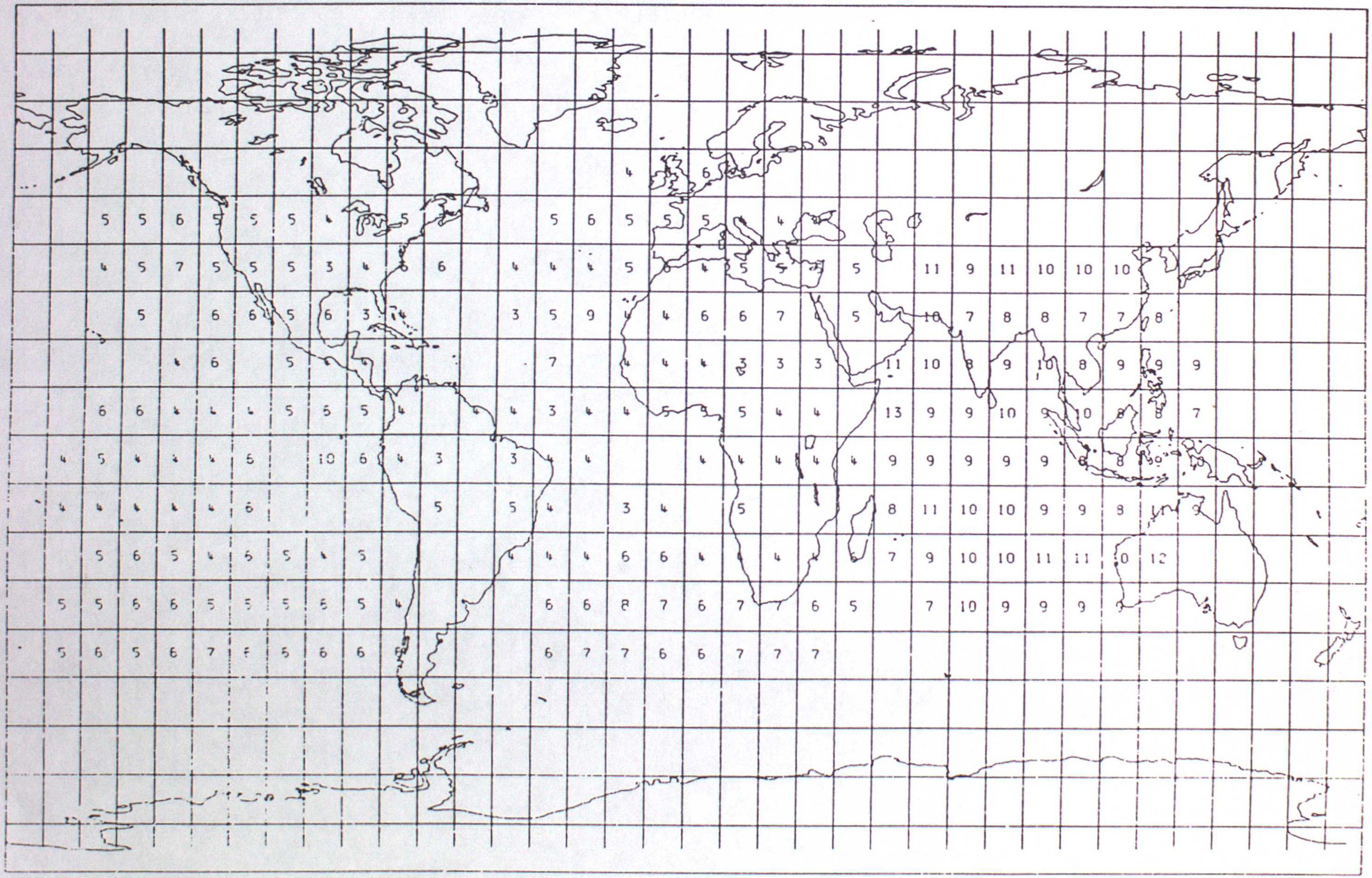
FIGURE 17


REPRESENTS 5 M/S

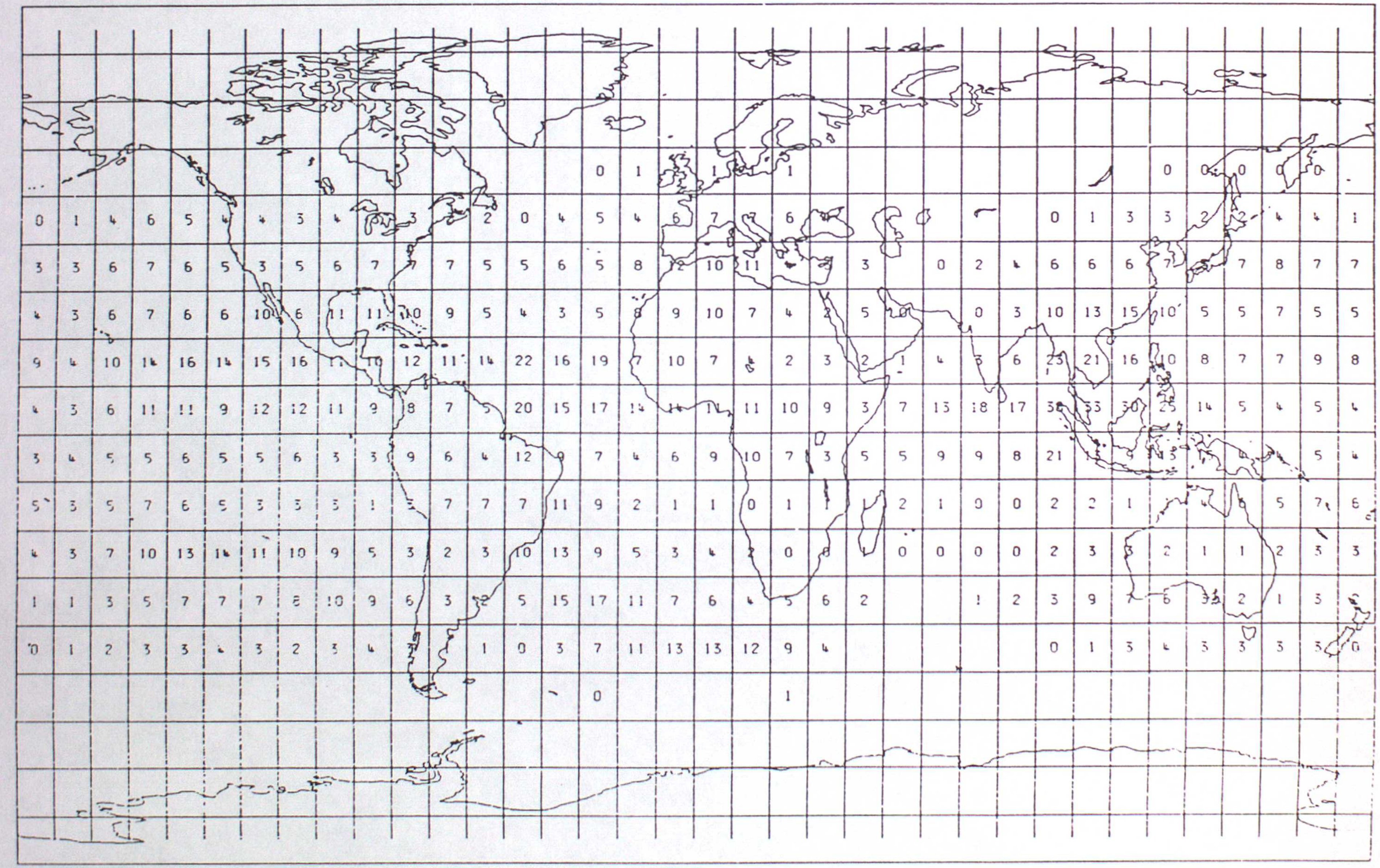
SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 18
MAY 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-0.4 -0.2 -0.3
-2.8 -1.6 -1.7 -1.4 -2.5 -2.8 -1.2 -2.7 -2.7 -3.5 0.2 0.1 -0.5 -0.3 -0.7 -0.6 -0.9 -0.1
-1.4 1.0 0.8 -1.6 -0.8 -3.0 -0.9 0.8 -3.3 -1.3 0.3 0.0 -0.5 -0.2 -1.7 0.2 -0.4 0.7 -4.5 -1.3 4.4 4.2 3.8 2.7 2.3 1.6
1.0 2.9 -0.8 -1.7 -2.6 -0.5 -1.2 -0.6 2.1 0.4 1.1 -0.1 -1.1 0.2 -1.0 -1.0 -1.9 4.3 2.1 2.3 3.5 1.8 0.7 0.7
-0.3 -2.8 -1.3 -1.3 -1.3 4.1 1.5 0.8 0.3 0.0 0.5 -0.4 3.4 6.4 3.1 4.8 6.0 4.9 6.5 5.3 4.9
2.1 1.4 0.4 1.0 0.1 -0.9 -0.4 2.0 0.6 0.6 1.3 0.8 -0.4 -1.0 -0.9 -0.8 -0.6 0.3 -0.4 4.2 4.6 3.5 5.3 6.5 6.3 5.4 3.9 2.1
-0.6 -0.5 -0.1 0.4 1.2 3.0 7.4 2.5 0.9 0.4 0.6 0.2 0.0 0.8 1.9 0.8 1.8 1.8 6.0 4.5 4.6 5.9 5.8 5.2 4.2 3.9 3.9
-0.6 -1.0 0.2 -0.1 -0.2 -1.3 -0.2 0.9 2.8 2.6 2.2 0.6 3.9 6.0 2.5 5.5 1.6 1.0 5.6 3.2 2.3
-3.1 -2.7 -1.7 -1.4 -1.5 -1.8 -0.4 0.4 0.4 -0.4 -0.4 0.7 -0.7 0.9 -0.7 -0.6 1.2 -0.5 -1.9 -1.3 -2.2 -3.0 -5.0 -2.8 -4.1 1.3
-3.0 -3.0 -3.8 -2.4 -2.2 -1.6 -1.7 -2.6 -1.2 -0.4 -1.6 -1.4 -2.8 -0.2 -1.6 -2.9 -2.7 -1.3 -2.5 0.1 -1.4 0.1 -0.2 -1.0 -1.5
-0.2 -2.0 -2.5 -3.0 -1.8 -0.5 -1.6 -1.2 -2.9 -2.6 0.2 -1.4 -1.5 -0.2 -0.9 -1.5 -0.7 -2.3

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 19
MAY 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


4 6
5 5 6 5 5 5 4 5 5 6 5 5 5 4
4 5 7 5 5 5 3 4 6 6 4 4 4 5 6 4 5 5 5 5 11 9 11 10 10 10
5 6 6 5 6 3 4 3 5 9 4 4 6 6 7 4 5 10 7 8 8 7 7 8
4 6 5 4 4 7 4 4 4 3 3 3 11 10 8 9 10 8 9 9 9
6 6 4 4 4 5 5 5 4 4 4 3 4 4 5 5 5 4 4 13 9 9 10 9 10 8 8 7
4 5 4 4 4 5 10 6 4 3 3 4 4 4 4 4 4 4 9 9 9 9 9 8 8 10
4 4 4 4 4 6 5 5 4 3 4 5 8 11 10 10 9 9 8 11 9
5 6 5 4 6 5 4 5 4 4 4 6 6 4 4 4 4 6 7 9 10 10 11 11 10 12
5 5 6 6 5 5 5 6 5 4 6 6 8 7 6 7 7 6 5 7 10 9 9 9 9
5 6 5 6 7 6 5 6 6 6 6 7 7 6 6 7 7 7

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
MAY 1994



															0	1		1		1										0	0	0	0	0	
0	1	4	6	5	4	4	3	4		3		2	0	4	5	4	6	7	7	6							0	1	3	3	2	2	4	4	1
3	3	6	7	6	5	3	5	6	7	7	7	5	5	6	5	8	12	10	11		3	3		0	2	4	6	6	6	7	[illegible]	7	8	7	7
4	3	6	7	6	6	10	6	11	11	10	9	5	4	3	5	8	9	10	7	4	2	5	0		0	3	10	13	15	10	5	5	7	5	5
9	4	10	14	16	14	15	16	11	10	12	11	14	22	16	19	7	10	7	4	2	3	2	1	4	3	6	23	21	16	10	8	7	7	9	8
4	3	6	11	11	9	12	12	11	9	8	7	5	20	15	17	14	14	11	11	10	9	3	7	13	18	17	38	33	30	25	14	5	4	5	4
3	4	5	5	6	5	5	6	3	3	9	6	4	12	9	7	4	6	9	10	7	3	5	5	9	9	8	21	13	9	13	15			5	4
5	3	5	7	6	5	3	3	3	1	3	7	7	7	11	9	2	1	1	0	1	1	1	2	1	0	0	2	2	1		4	6	5	7	6
4	3	7	10	13	14	11	10	9	5	3	2	3	10	13	9	5	3	4	2	0	0	1	0	0	0	0	2	3	3	2	1	1	2	3	3
1	1	3	5	7	7	7	8	10	9	6	3	2	5	15	17	11	7	6	4	5	6	2			1	2	3	9	7	6	3	2	1	3	2
0	1	2	3	3	4	3	2	3	4	7		1	0	3	7	11	13	13	12	9	4						0	1	3	4	3	3	3	3	0
															0					1															

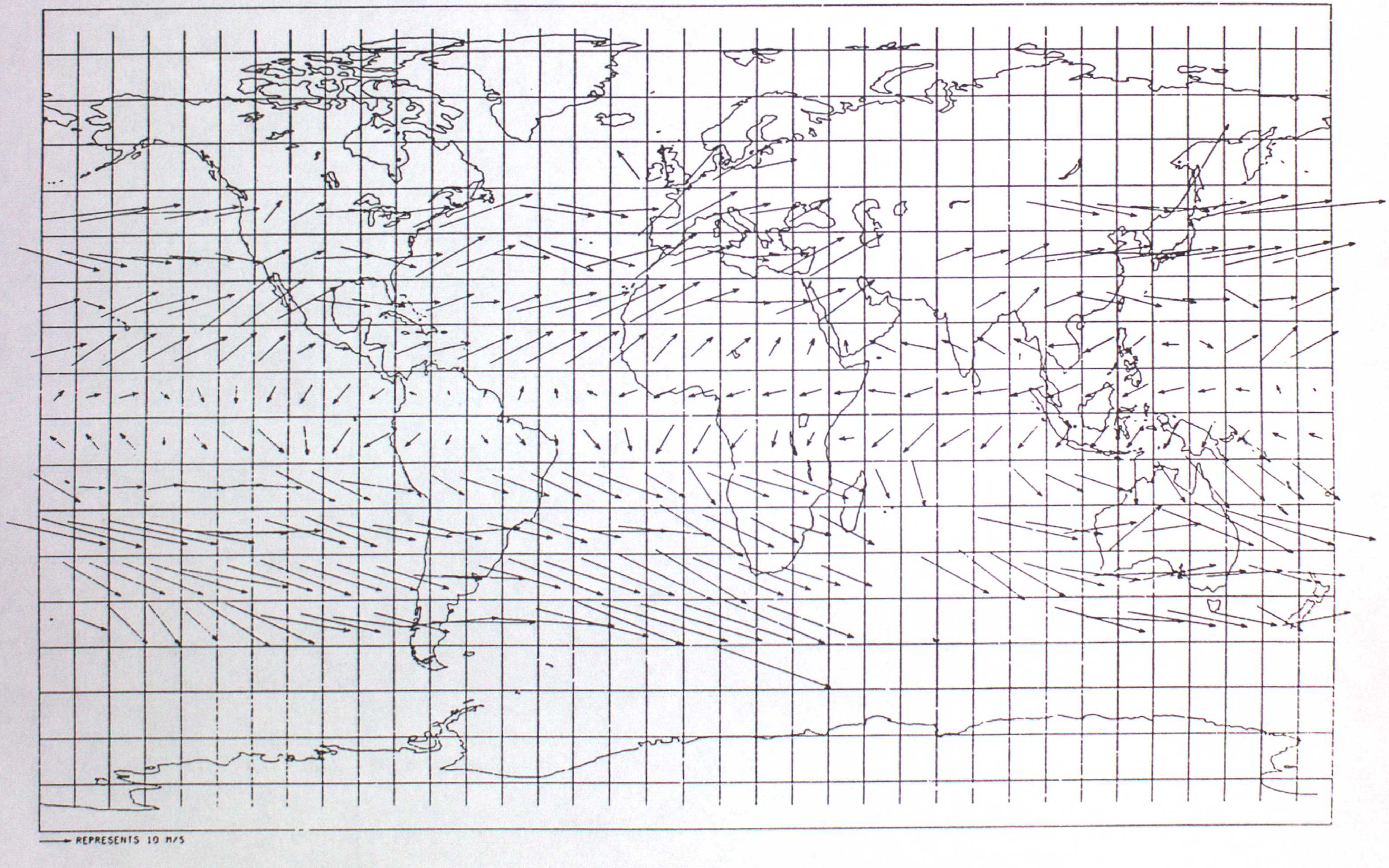
SATOB VECTOR MEAN WINDS BETWEEN 101-400 HPA

MAY 1994

ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 21


REPRESENTS 10 M/S

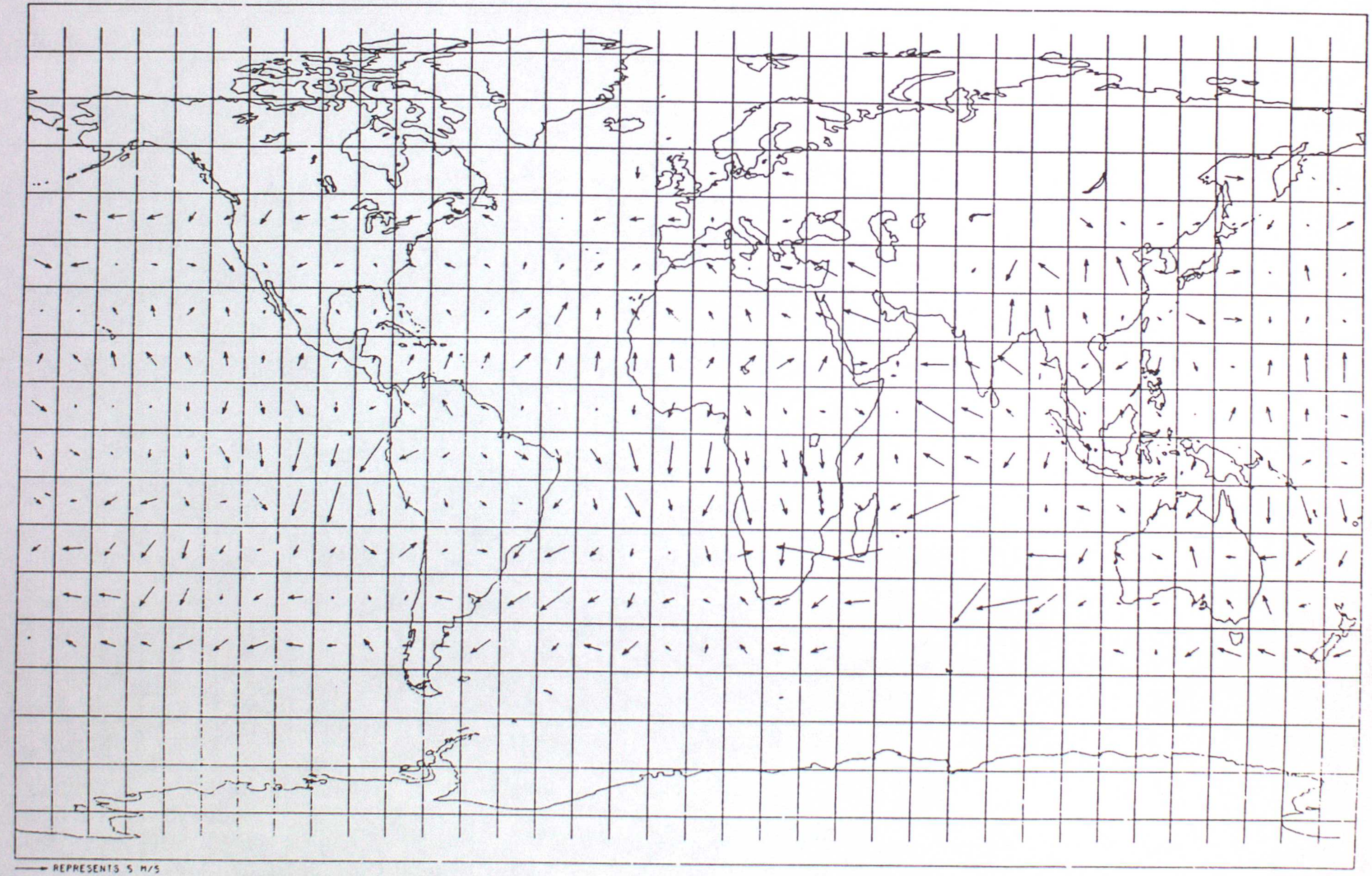
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA

MAY 1994

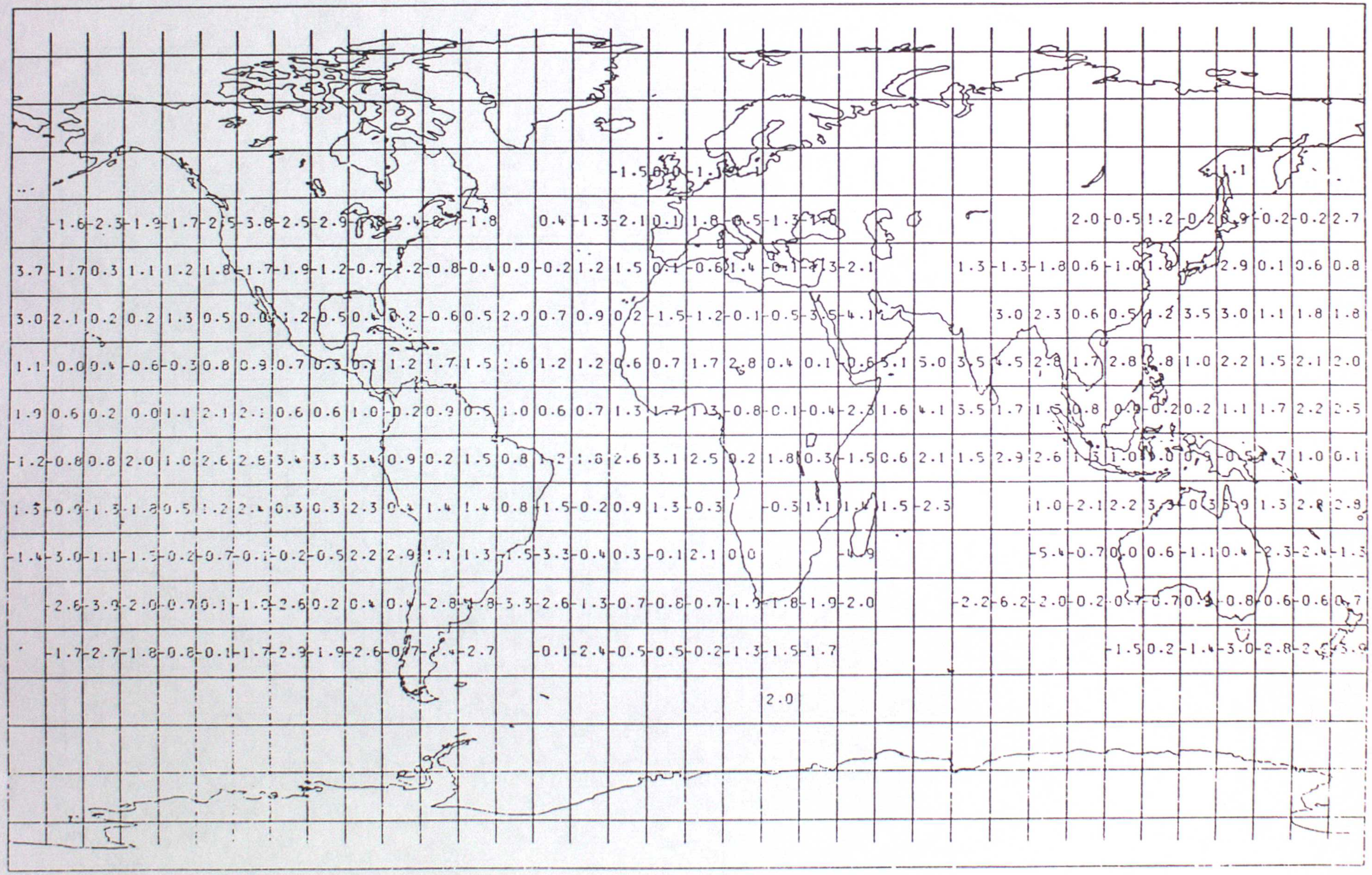
ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

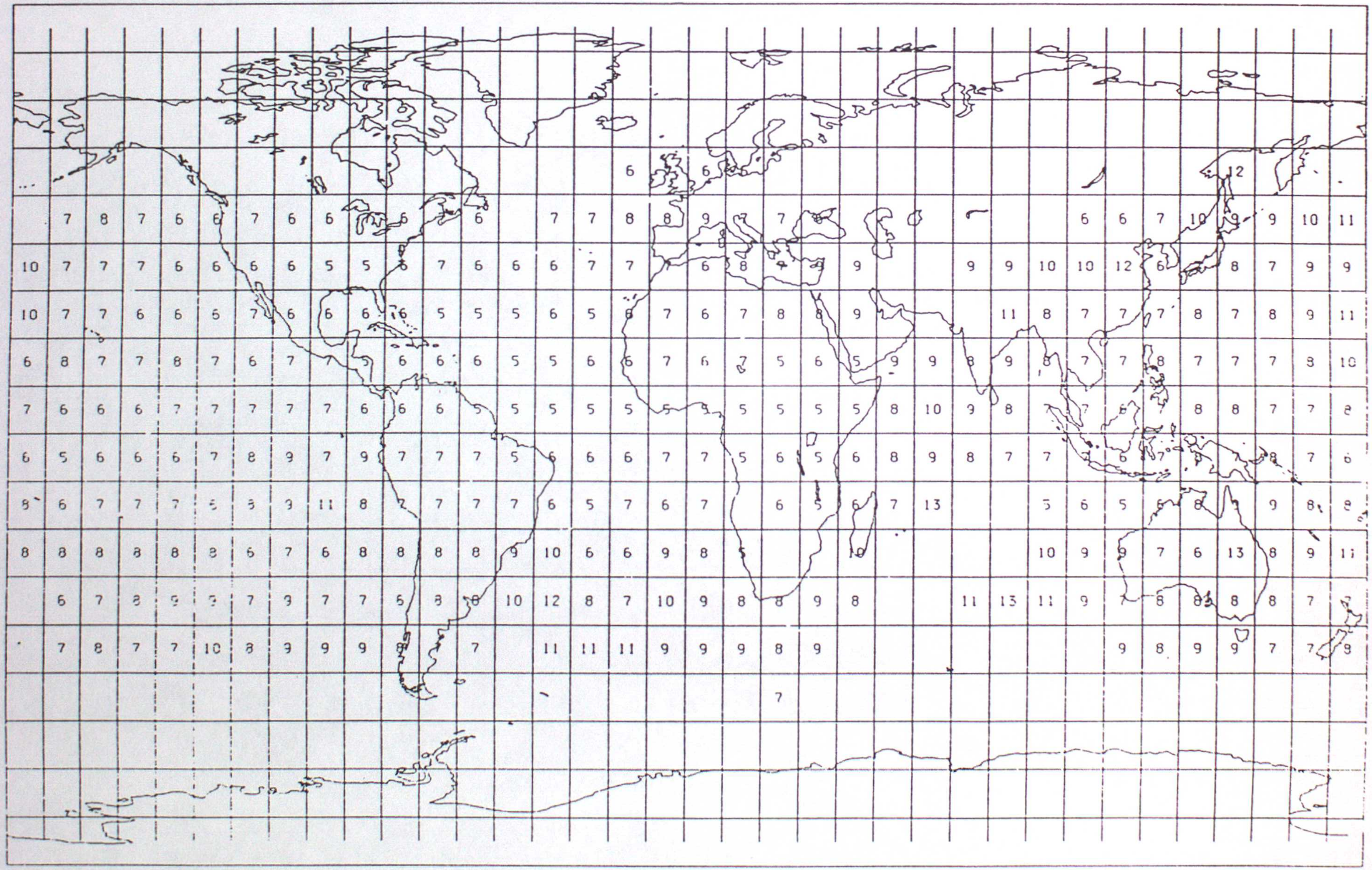
FIGURE 22


REPRESENTS 5 M/S

SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 23
MAY 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-1.5 0.0 -1.1 1.1
-1.6 -2.3 -1.9 -1.7 -2.5 -3.8 -2.5 -2.9 -2.4 -2.7 -1.8 0.4 -1.3 -2.1 0.1 1.8 -0.5 -1.3 -1.0 2.0 -0.5 1.2 -0.2 0.9 -0.2 -0.2 2.7
3.7 -1.7 0.3 1.1 1.2 1.8 -1.7 -1.9 -1.2 -0.7 -1.2 -0.8 -0.4 0.0 -0.2 1.2 1.5 0.1 -0.6 1.4 -0.1 -1.3 -2.1 1.3 -1.3 -1.8 0.6 -1.0 1.0 2.9 0.1 0.6 0.8
3.0 2.1 0.2 0.2 1.3 0.5 0.0 -1.2 -0.5 0.4 0.2 -0.6 0.5 2.0 0.7 0.9 0.2 -1.5 -1.2 -0.1 -0.5 -3.5 -4.1 3.0 2.3 0.6 0.5 1.2 3.5 3.0 1.1 1.8 1.8
1.1 0.0 0.4 -0.6 -0.3 0.8 0.9 0.7 0.3 0.1 1.2 1.7 1.5 1.6 1.2 1.2 0.6 0.7 1.7 2.8 0.4 0.1 -0.6 5.1 5.0 3.5 4.5 2.8 1.7 2.8 2.8 1.0 2.2 1.5 2.1 2.0
1.9 0.6 0.2 0.0 1.1 2.1 2.1 0.6 0.6 1.0 -0.2 0.9 0.5 1.0 0.6 0.7 1.3 1.7 1.3 -0.8 -0.1 -0.4 -2.3 1.6 4.1 3.5 1.7 1.5 0.8 0.9 -0.2 0.2 1.1 1.7 2.2 2.5
-1.2 -0.8 0.8 2.0 1.0 2.6 2.8 3.4 3.3 3.4 0.9 0.2 1.5 0.8 1.2 1.8 2.6 3.1 2.5 0.2 1.8 0.3 -1.5 0.6 2.1 1.5 2.9 2.6 1.3 1.0 0.0 0.9 -0.5 1.7 1.0 0.1
1.3 -0.9 -1.3 -1.8 0.5 1.2 2.4 0.3 0.3 2.3 0.4 1.4 1.4 0.8 -1.5 -0.2 0.9 1.3 -0.3 -0.3 1.1 1.4 1.5 -2.3 1.0 -2.1 2.2 3.3 -0.3 5.9 1.3 2.8 2.8
-1.4 -3.0 -1.1 -1.3 -0.2 -0.7 -0.1 -0.2 -0.5 2.2 2.9 1.1 1.3 -1.5 -3.3 -0.4 0.3 -0.1 2.1 0.0 -4.9 -5.4 -0.7 0.0 0.6 -1.1 0.4 -2.3 -2.4 -1.3
-2.6 -3.9 -2.0 -0.7 0.1 -1.0 -2.6 0.2 0.4 0.4 -2.8 -3.8 -3.3 -2.6 -1.3 -0.7 -0.8 -0.7 -1.9 -1.8 -1.9 -2.0 -2.2 -6.2 -2.0 -0.2 -0.7 -0.7 0.3 -0.8 0.6 -0.6 0.7
-1.7 -2.7 -1.8 -0.8 -0.1 -1.7 -2.3 -1.9 -2.6 -0.7 -1.4 -2.7 -0.1 -2.4 -0.5 -0.5 -0.2 -1.3 -1.5 -1.7 -1.5 0.2 -1.4 -3.0 -2.8 -2.5 -3.9
2.0

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 24
MAY 1994
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



6 6 12
7 8 7 6 6 7 6 6 6 7 6 7 7 8 8 9 7 7 6 6 7 10 9 9 10 11
10 7 7 7 6 6 6 6 5 5 5 7 6 6 6 7 7 7 6 8 9 9 9 9 10 10 12 6 8 7 9 9
10 7 7 6 6 6 7 6 6 6 6 5 5 5 6 5 6 7 6 7 8 8 9 11 8 7 7 7 8 7 8 9 11
6 8 7 7 8 7 6 7 7 5 6 6 6 5 5 6 6 7 6 7 5 6 5 9 9 8 9 8 7 7 8 7 7 7 8 10
7 6 6 6 7 7 7 7 7 6 6 6 5 5 5 5 5 5 5 5 5 5 5 8 10 9 8 7 7 6 7 8 8 7 7 2
6 5 6 6 6 7 8 9 7 9 7 7 7 5 6 6 6 7 7 5 6 5 6 8 9 8 7 7 7 6 7 8 7 6
8 6 7 7 7 6 3 9 11 8 7 7 7 7 6 5 7 6 7 6 5 6 7 13 5 6 5 6 8 9 8 2
8 8 8 8 8 8 6 7 6 8 8 8 8 9 10 6 6 9 8 5 10 10 9 9 7 6 13 8 9 11
6 7 8 9 9 7 9 7 7 6 8 8 10 12 8 7 10 9 8 8 9 8 11 13 11 9 7 8 8 8 8 7 2
7 8 7 7 10 8 9 9 9 8 7 11 11 11 9 9 9 8 9 9 8 9 9 7 7 8
7

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-11, NOAA-12 500 km.

Standard of comparison :Background field from Bracknell global model.

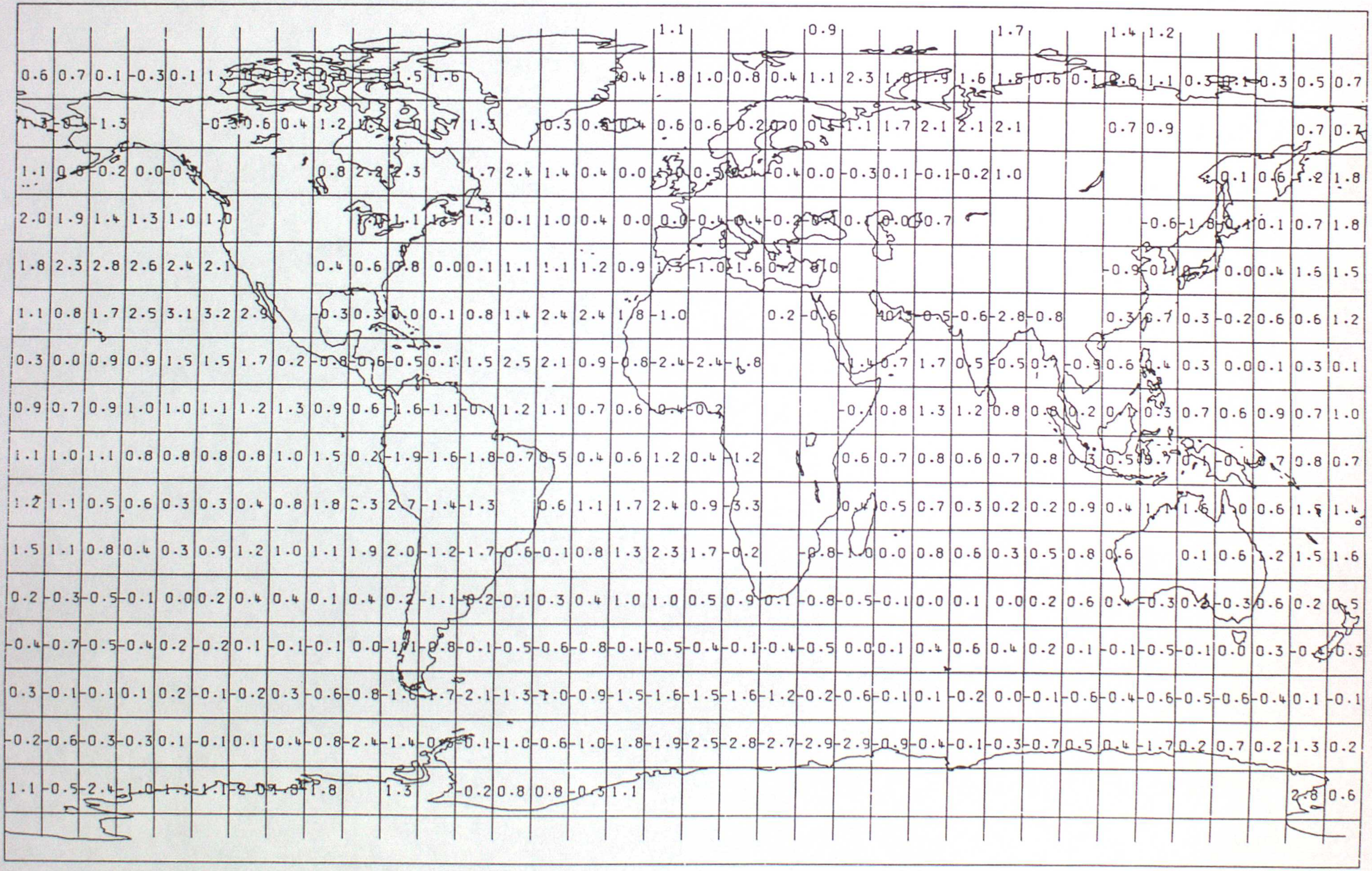
Selection Criteria :All SATEM soundings where number of observations > 30.

Data Extracted :Layer:850 - 1000 hPa
100 - 300 hPa
30 - 50 hPa

:Mean observation minus background temperature differences

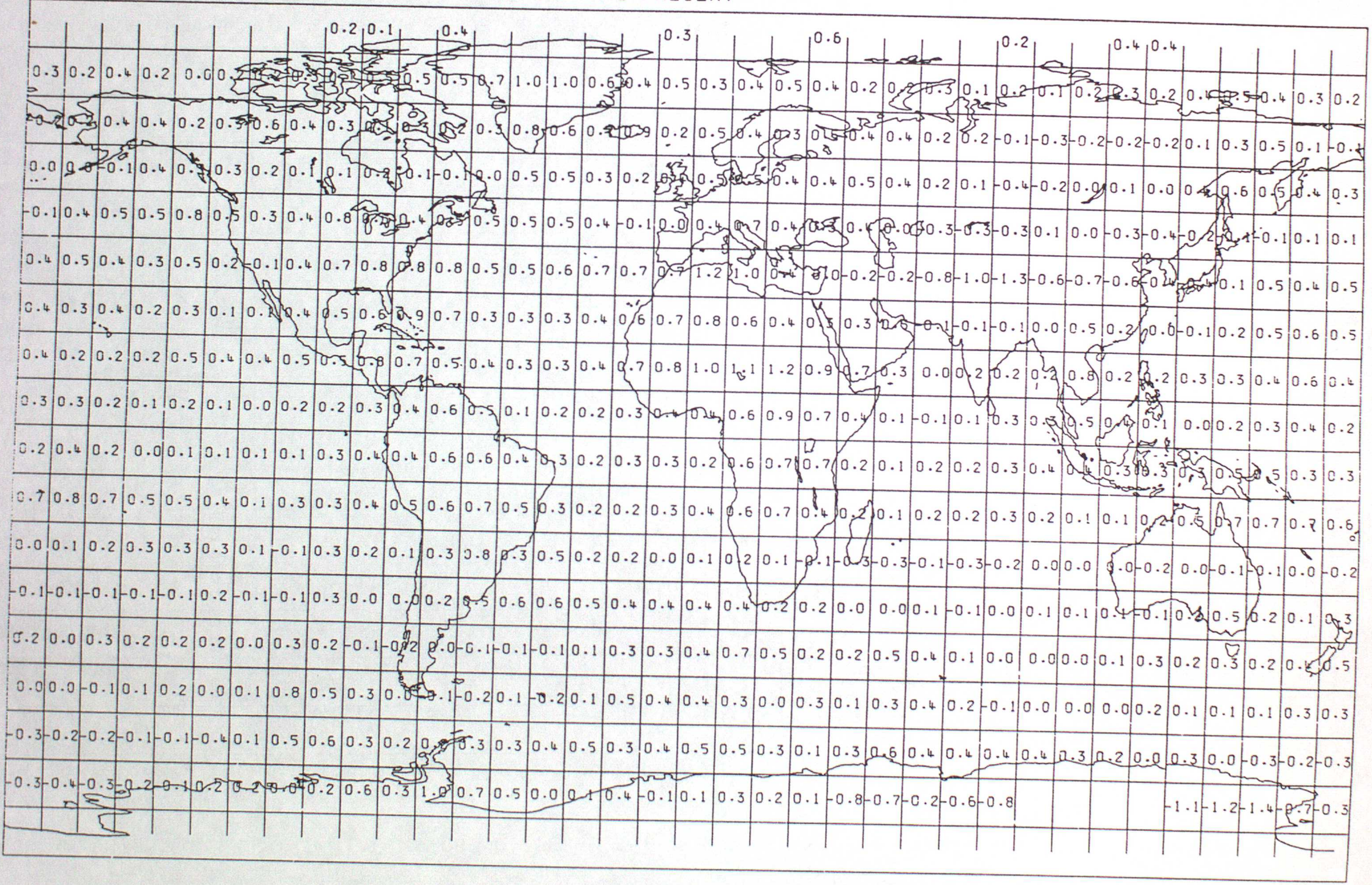
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
MAY 1994
NOAA-11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 25


1.1 0.9 1.7 1.4 1.2
0.6 0.7 0.1 -0.3 0.1 1.5 1.6 0.4 1.8 1.0 0.8 0.4 1.1 2.3 1.6 0.6 0.1 1.1 0.3 -0.3 0.5 0.7
-1.3 -0.3 0.6 0.4 1.2 1.3 0.3 0.6 0.6 -0.2 1.1 1.7 2.1 2.1 2.1 0.7 0.9 0.7 0.7
1.1 -0.2 0.0 0.8 2.3 1.7 2.4 1.4 0.4 0.0 0.5 -0.4 0.0 -0.3 0.1 -0.1 -0.2 1.0 0.1 0.6 1.8
2.0 1.9 1.4 1.3 1.0 1.1 1.1 0.1 1.0 0.4 0.0 -0.4 -0.2 0.7 -0.6 0.1 0.7 1.8
1.8 2.3 2.8 2.6 2.4 2.1 0.4 0.6 0.8 0.0 0.1 1.1 1.1 1.2 0.9 -1.0 1.6 -0.9 0.0 0.4 1.5 1.5
1.1 0.8 1.7 2.5 3.1 3.2 -0.3 0.3 0.0 0.1 0.8 1.4 2.4 2.4 -1.0 0.2 -0.5 -0.6 -2.8 -0.8 0.3 0.3 -0.2 0.6 0.6 1.2
0.3 0.0 0.9 0.9 1.5 1.5 1.7 0.2 -0.5 1.5 2.5 2.1 0.9 -2.4 -2.4 0.7 1.7 -0.5 0.6 0.3 0.0 0.1 0.3 0.1
0.9 0.7 0.9 1.0 1.0 1.1 1.2 1.3 0.9 0.6 -1.1 1.2 1.1 0.7 0.6 0.8 1.3 1.2 0.8 0.3 0.7 0.6 0.9 0.7 1.0
1.1 1.0 1.1 0.8 0.8 0.8 0.8 1.0 1.5 -1.9 -1.6 -1.8 -0.7 0.4 0.6 1.2 0.4 1.2 0.6 0.7 0.8 0.6 0.7 0.8 0.7 0.8 0.7
1.2 1.1 0.5 0.6 0.3 0.3 0.4 0.8 1.8 -1.4 -1.3 0.6 1.1 1.7 2.4 0.9 0.5 0.7 0.3 0.2 0.2 0.9 0.4 0.6 1.4
1.5 1.1 0.8 0.4 0.3 0.9 1.2 1.0 1.1 1.9 2.0 -1.2 -1.7 -0.1 0.8 1.3 2.3 1.7 0.0 0.8 0.6 0.3 0.5 0.8 0.1 0.6 1.5 1.6
0.2 -0.3 -0.5 -0.1 0.0 0.2 0.4 0.4 0.1 0.4 -1.1 -0.1 0.3 0.4 1.0 1.0 0.5 0.9 -0.8 -0.5 -0.1 0.0 0.1 0.0 0.2 0.6 -0.3 -0.3 0.6 0.2
-0.4 -0.7 -0.5 -0.4 0.2 -0.2 0.1 -0.1 -0.1 0.0 -0.1 -0.5 -0.6 -0.8 -0.1 -0.5 -0.4 -0.1 -0.4 -0.5 0.0 0.1 0.4 0.6 0.4 0.2 0.1 -0.1 -0.5 -0.1 0.0 0.3 -0.3
0.3 -0.1 -0.1 0.1 0.2 -0.1 -0.2 0.3 -0.6 -0.8 -2.1 -1.3 -0.9 -1.5 -1.6 -1.5 -1.6 -1.2 -0.2 -0.6 -0.1 0.1 -0.2 0.0 -0.1 -0.6 -0.4 -0.6 -0.5 -0.6 -0.4 0.1 -0.1
-0.2 -0.6 -0.3 -0.3 0.1 -0.1 0.1 -0.4 -0.8 -2.4 -1.4 -0.1 -1.0 -0.6 -1.0 -1.8 -1.9 -2.5 -2.8 -2.7 -2.9 -2.9 -0.4 -0.1 -0.3 -0.7 0.5 -1.7 0.2 0.7 0.2 1.3 0.2
1.1 -0.5 -2.4 1.8 1.3 -0.2 0.8 0.8 1.1 0.6

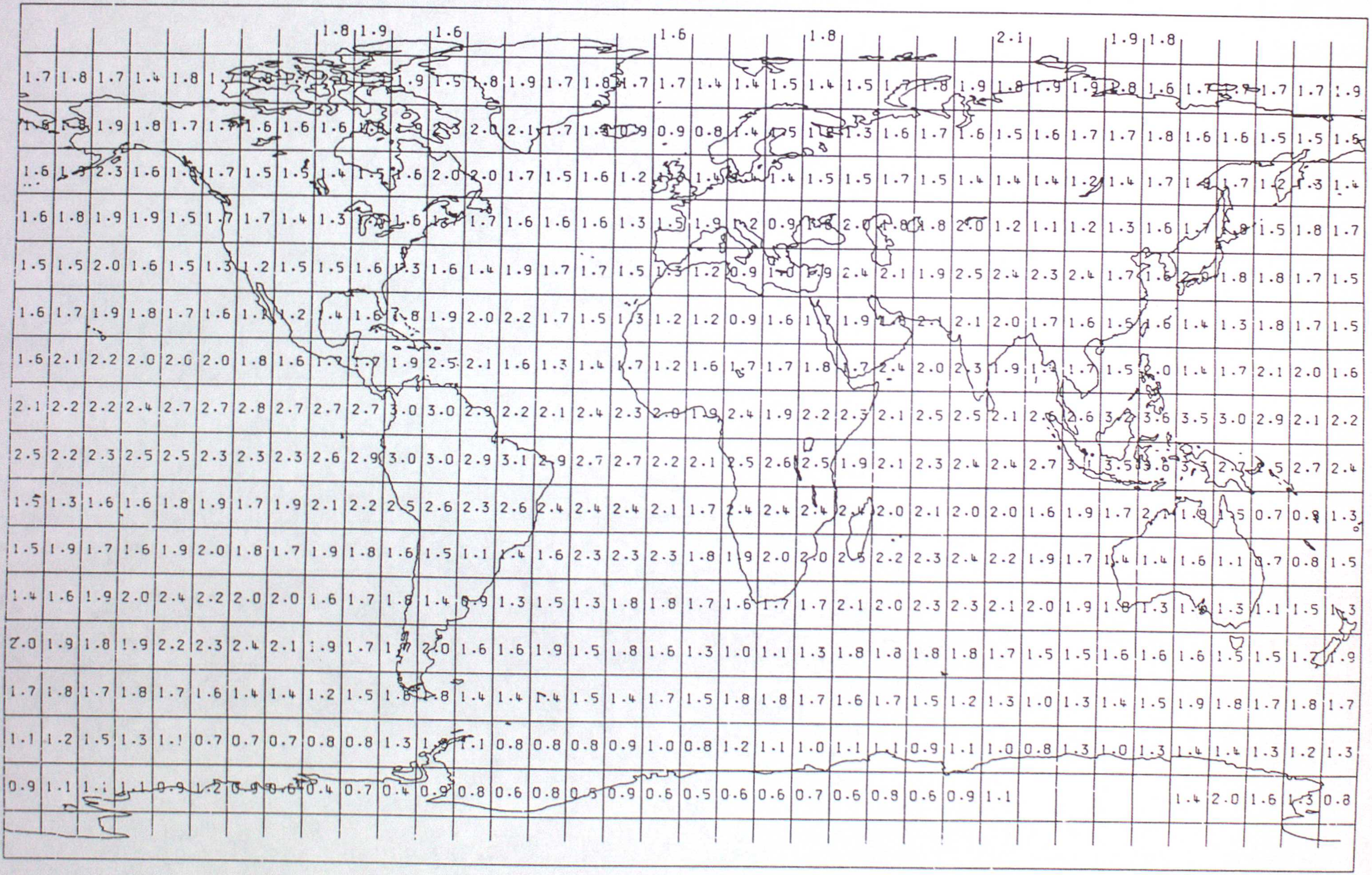
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
MAY 1994
NOAA-11, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 26


0.2 0.1 0.4 0.3 0.6 0.2 0.4 0.4
0.3 0.2 0.4 0.2 0.0 0.5 0.5 0.7 1.0 1.0 0.6 0.4 0.5 0.3 0.4 0.5 0.4 0.2 0.3 0.1 0.2 0.1 0.2 0.3 0.2 0.4 0.5 -0.4 0.3 0.2
0.2 0.4 0.4 0.2 0.3 0.6 0.4 0.3 0.3 0.8 0.6 0.9 0.2 0.5 0.4 0.3 0.5 -0.4 0.4 0.2 0.2 -0.1 -0.3 -0.2 -0.2 -0.2 0.1 0.3 0.5 0.1 -0.1
0.0 0.0 -0.1 0.4 0.3 0.3 0.2 0.1 0.1 0.2 -0.1 -0.1 0.0 0.5 0.5 0.3 0.2 0.5 0.4 0.4 0.5 0.4 0.2 0.1 -0.4 -0.2 0.0 0.1 0.0 0.4 0.6 0.5 0.4 0.3
-0.1 0.4 0.5 0.5 0.8 0.5 0.3 0.4 0.8 0.4 0.5 0.5 0.5 0.4 -0.1 0.0 0.4 0.7 0.4 0.3 0.4 0.0 -0.3 -0.3 -0.3 0.1 0.0 -0.3 -0.4 -0.2 -0.1 -0.1 0.1 0.1
0.4 0.5 0.4 0.3 0.5 0.2 -0.1 0.4 0.7 0.8 0.8 0.8 0.5 0.5 0.6 0.7 0.7 0.7 1.2 1.0 0.4 0.0 -0.2 -0.2 -0.8 -1.0 -1.3 -0.6 -0.7 -0.6 0.4 0.1 0.5 0.4 0.5
0.4 0.3 0.4 0.2 0.3 0.1 0.1 0.4 0.5 0.6 0.9 0.7 0.3 0.3 0.3 0.4 0.6 0.7 0.8 0.6 0.4 0.5 0.3 0.5 -0.1 -0.1 -0.1 0.0 0.5 0.2 0.0 -0.1 0.2 0.5 0.6 0.5
0.4 0.2 0.2 0.2 0.5 0.4 0.4 0.5 0.5 0.8 0.7 0.5 0.4 0.3 0.3 0.4 0.7 0.8 1.0 1.1 1.2 0.9 0.7 0.3 0.0 0.2 0.2 0.2 0.8 0.2 0.2 0.3 0.3 0.4 0.6 0.4
0.3 0.3 0.2 0.1 0.2 0.1 0.0 0.2 0.2 0.3 0.4 0.6 0.5 0.1 0.2 0.2 0.3 0.4 0.4 0.6 0.9 0.7 0.4 0.1 -0.1 0.1 0.3 0.3 0.5 0.4 0.1 0.0 0.2 0.3 0.4 0.2
0.2 0.4 0.2 0.0 0.1 0.1 0.1 0.1 0.3 0.4 0.4 0.6 0.6 0.4 0.3 0.2 0.3 0.3 0.2 0.6 0.7 0.7 0.2 0.1 0.2 0.2 0.3 0.4 0.4 0.3 0.3 0.3 0.5 0.5 0.3 0.3
0.7 0.8 0.7 0.5 0.5 0.4 0.1 0.3 0.3 0.4 0.5 0.6 0.7 0.5 0.3 0.2 0.2 0.3 0.4 0.6 0.7 0.4 0.2 0.1 0.2 0.2 0.3 0.2 0.1 0.1 0.2 0.5 0.7 0.7 0.7 0.6
0.0 0.1 0.2 0.3 0.3 0.3 0.1 -0.1 0.3 0.2 0.1 0.3 0.8 0.3 0.5 0.2 0.2 0.0 0.1 0.2 0.1 -0.1 -0.3 -0.3 -0.1 -0.3 -0.2 0.0 0.0 0.0 -0.2 0.0 -0.1 -0.1 0.0 -0.2
-0.1 -0.1 -0.1 -0.1 -0.1 0.2 -0.1 -0.1 0.3 0.0 0.0 0.2 0.5 0.6 0.6 0.5 0.4 0.4 0.4 0.4 0.2 0.2 0.0 0.0 0.1 -0.1 0.0 0.1 0.1 0.1 -0.1 0.3 0.5 0.2 0.1 0.3
0.2 0.0 0.3 0.2 0.2 0.2 0.0 0.3 0.2 -0.1 -0.2 0.0 -0.1 -0.1 -0.1 0.1 0.3 0.3 0.4 0.7 0.5 0.2 0.2 0.5 0.4 0.1 0.0 0.0 0.0 0.1 0.3 0.2 0.3 0.2 0.4 0.5
0.0 0.0 -0.1 0.1 0.2 0.0 0.1 0.8 0.5 0.3 0.0 -0.1 -0.2 0.1 -0.2 0.1 0.5 0.4 0.4 0.3 0.0 0.3 0.1 0.3 0.4 0.2 -0.1 0.0 0.0 0.0 0.2 0.1 0.1 0.1 0.3 0.3
-0.3 -0.2 -0.2 -0.1 -0.1 -0.4 0.1 0.5 0.6 0.3 0.2 0.0 0.3 0.3 0.4 0.5 0.3 0.4 0.5 0.5 0.3 0.1 0.3 0.6 0.4 0.4 0.4 0.4 0.3 0.2 0.0 0.3 0.0 -0.3 -0.2 -0.3
-0.3 -0.4 -0.3 -0.2 -0.1 0.2 0.2 0.0 0.2 0.6 0.3 1.0 0.7 0.5 0.0 0.1 -0.4 -0.1 0.1 0.3 0.2 0.1 -0.8 -0.7 -0.2 -0.6 -0.8
-1.1 -1.2 -1.4 -0.7 -0.3

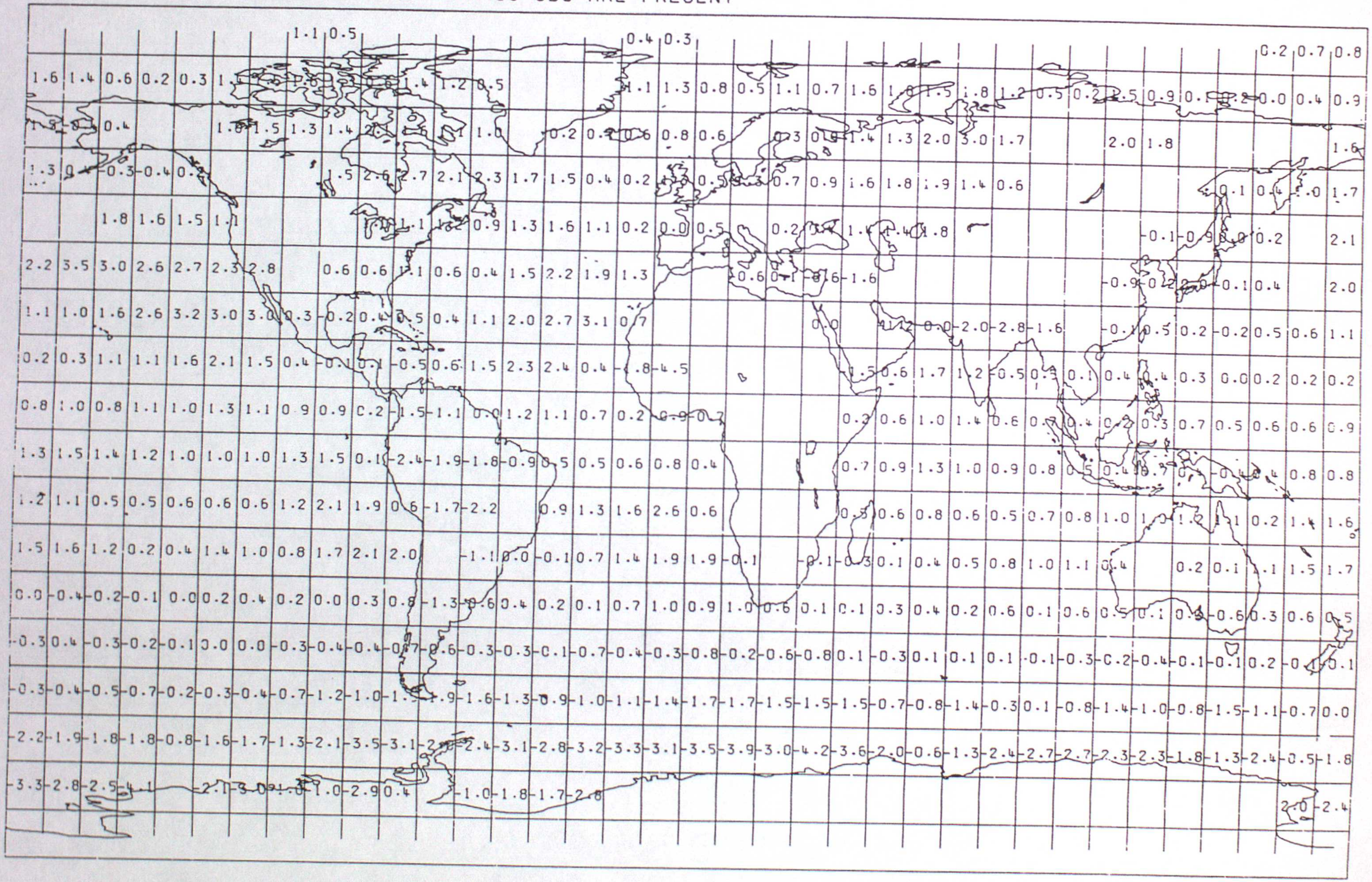
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
MAY 1994
NOAA-11. USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 27

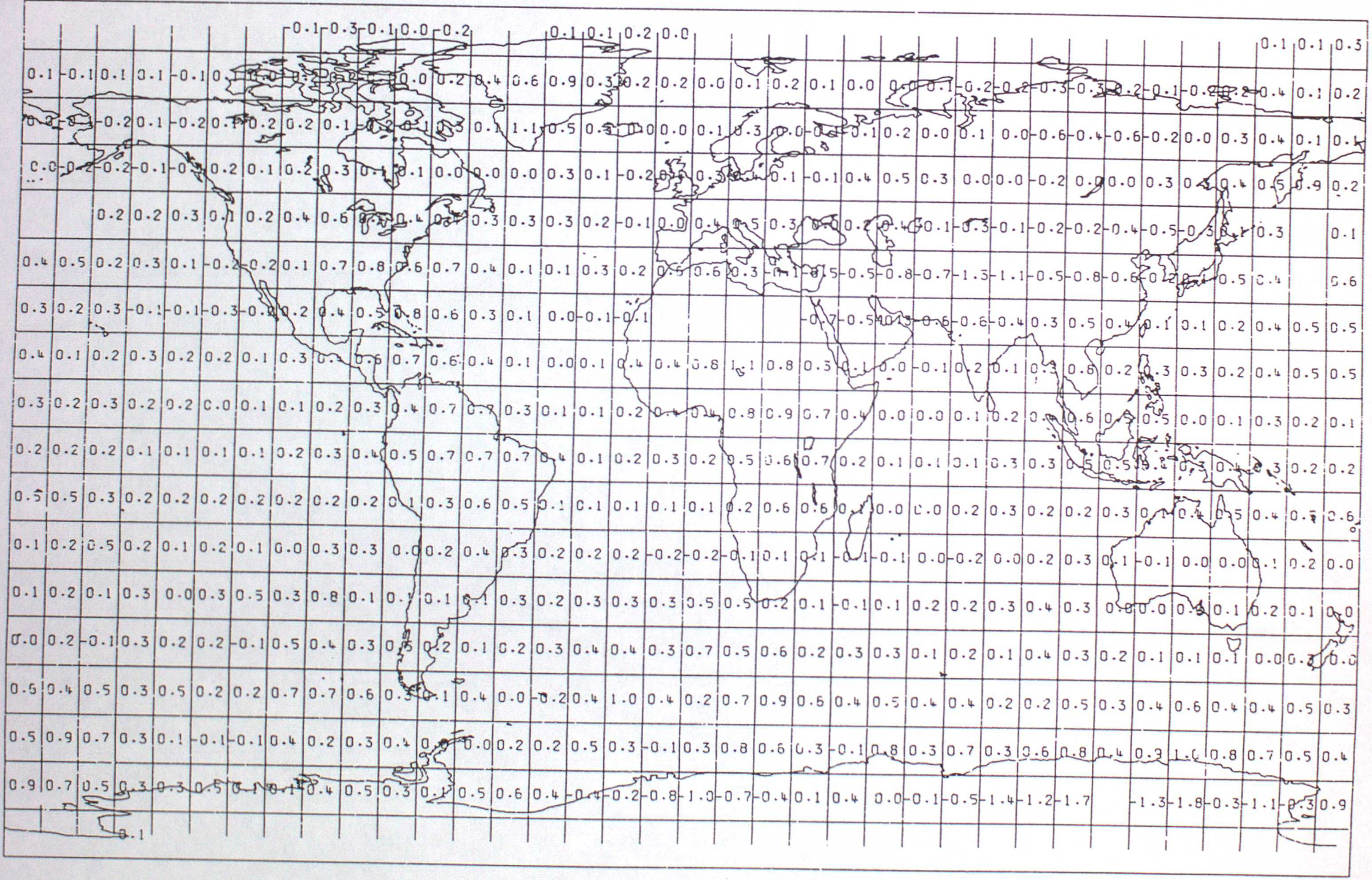

1.8 1.9 1.6 1.6 1.8 2.1 1.9 1.8
1.7 1.8 1.7 1.4 1.8 1.7 1.8 1.7 1.9 1.5 1.8 1.9 1.7 1.8 1.7 1.7 1.4 1.4 1.5 1.4 1.5 1.7 1.8 1.9 1.8 1.9 1.9 1.8 1.6 1.7 1.7 1.7 1.7 1.9
1.6 1.8 1.9 1.8 1.7 1.7 1.6 1.6 1.6 1.8 1.9 2.3 2.0 2.1 1.7 1.3 0.9 0.9 0.8 1.4 1.5 1.2 1.3 1.6 1.7 1.6 1.5 1.6 1.7 1.7 1.8 1.6 1.6 1.5 1.5 1.6
1.6 1.3 2.3 1.6 1.8 1.7 1.5 1.5 1.4 1.5 1.6 2.0 2.0 1.7 1.5 1.6 1.2 1.3 1.4 1.4 1.4 1.5 1.5 1.7 1.5 1.4 1.4 1.4 1.2 1.4 1.7 1.9 1.7 1.2 1.3 1.4
1.6 1.8 1.9 1.9 1.5 1.7 1.7 1.4 1.3 1.6 1.7 1.7 1.6 1.6 1.6 1.3 1.5 1.9 1.2 0.9 1.8 2.0 1.8 1.8 2.0 1.2 1.1 1.2 1.3 1.6 1.7 1.8 1.5 1.8 1.7
1.5 1.5 2.0 1.6 1.5 1.3 1.2 1.5 1.5 1.6 1.3 1.6 1.4 1.9 1.7 1.7 1.5 1.3 1.2 0.9 1.0 1.9 2.4 2.1 1.9 2.5 2.4 2.3 2.4 1.7 1.6 2.0 1.8 1.8 1.7 1.5
1.6 1.7 1.9 1.8 1.7 1.6 1.1 1.2 1.4 1.6 1.8 1.9 2.0 2.2 1.7 1.5 1.3 1.2 1.2 0.9 1.6 1.7 1.9 1.8 2.1 2.1 2.0 1.7 1.6 1.5 1.6 1.4 1.3 1.8 1.7 1.5
1.6 2.1 2.2 2.0 2.0 2.0 1.8 1.6 1.7 1.7 1.9 2.5 2.1 1.6 1.3 1.4 1.7 1.2 1.6 1.7 1.7 1.8 1.7 2.4 2.0 2.3 1.9 1.7 1.5 2.0 1.4 1.7 2.1 2.0 1.6
2.1 2.2 2.2 2.4 2.7 2.7 2.8 2.7 2.7 2.7 3.0 3.0 2.9 2.2 2.1 2.4 2.3 2.0 1.9 2.4 1.9 2.2 2.3 2.1 2.5 2.5 2.1 2.6 2.6 3.2 3.6 3.5 3.0 2.9 2.1 2.2
2.5 2.2 2.3 2.5 2.5 2.3 2.3 2.3 2.6 2.9 3.0 3.0 2.9 3.1 2.9 2.7 2.7 2.2 2.1 2.5 2.6 2.5 1.9 2.1 2.3 2.4 2.4 2.7 3.1 3.5 3.6 3.3 2.7 2.5 2.7 2.4
1.5 1.3 1.6 1.6 1.8 1.9 1.7 1.9 2.1 2.2 2.5 2.6 2.3 2.6 2.4 2.4 2.4 2.1 1.7 2.4 2.4 2.4 2.4 2.0 2.1 2.0 2.0 1.6 1.9 1.7 2.1 1.9 1.5 0.7 0.8 1.3
1.5 1.9 1.7 1.6 1.9 2.0 1.8 1.7 1.9 1.8 1.6 1.5 1.1 1.4 1.6 2.3 2.3 2.3 1.8 1.9 2.0 2.0 2.5 2.2 2.3 2.4 2.2 1.9 1.7 1.4 1.4 1.6 1.1 0.7 0.8 1.5
1.4 1.6 1.9 2.0 2.4 2.2 2.0 2.0 1.6 1.7 1.8 1.4 0.9 1.3 1.5 1.3 1.8 1.8 1.7 1.6 1.7 1.7 2.1 2.0 2.3 2.3 2.1 2.0 1.9 1.8 1.3 1.4 1.3 1.1 1.5 1.3
2.0 1.9 1.8 1.9 2.2 2.3 2.4 2.1 1.9 1.7 1.7 2.0 1.6 1.6 1.9 1.5 1.8 1.6 1.3 1.0 1.1 1.3 1.8 1.8 1.8 1.8 1.7 1.5 1.5 1.6 1.6 1.6 1.5 1.5 1.7 1.9
1.7 1.8 1.7 1.8 1.7 1.6 1.4 1.4 1.2 1.5 1.8 1.8 1.4 1.4 1.4 1.5 1.4 1.7 1.5 1.8 1.8 1.7 1.6 1.7 1.5 1.2 1.3 1.0 1.3 1.4 1.5 1.9 1.8 1.7 1.8 1.7
1.1 1.2 1.5 1.3 1.1 0.7 0.7 0.7 0.8 0.8 1.3 1.3 1.1 0.8 0.8 0.8 0.9 1.0 0.8 1.2 1.1 1.0 1.1 1.1 0.9 1.1 1.0 0.8 1.3 1.0 1.3 1.4 1.4 1.3 1.2 1.3
0.9 1.1 1.1 1.1 0.9 1.2 0.9 0.6 0.4 0.7 0.4 0.9 0.8 0.6 0.8 0.5 0.9 0.6 0.5 0.6 0.6 0.7 0.6 0.8 0.6 0.9 1.1 1.4 2.0 1.6 1.3 0.8

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
MAY 1994
NOAA-12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 28



500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
MAY 1994
FIGURE 29
NOAA-12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT


-0.1 -0.3 -0.1 0.0 -0.2 0.1 0.1 0.2 0.0 0.1 0.1 0.3
0.1 -0.1 0.1 0.1 -0.1 0.1 0.0 0.2 0.4 0.6 0.9 0.3 0.2 0.2 0.0 0.1 0.2 0.1 0.0 0.0 -0.1 -0.2 -0.2 -0.3 -0.3 -0.2 -0.1 -0.2 -0.2 -0.4 0.1 0.2
-0.2 0.1 -0.2 0.1 0.2 0.2 0.1 0.1 1.1 0.5 0.3 0.0 0.0 0.1 0.3 0.0 -0.1 0.2 0.0 0.1 0.0 -0.6 -0.4 -0.6 -0.2 0.0 0.3 0.4 0.1 0.1
0.0 -0.2 -0.2 -0.1 -0.3 0.2 0.1 0.2 0.3 0.1 0.1 0.0 0.0 0.0 0.3 0.1 -0.2 0.3 -0.1 -0.1 0.4 0.5 0.3 0.0 0.0 -0.2 0.0 0.0 0.3 0.3 0.4 0.5 0.9 0.2
0.2 0.2 0.3 0.1 0.2 0.4 0.6 0.4 0.3 0.3 0.3 0.2 -0.1 0.0 0.4 0.5 0.3 0.0 0.2 -0.4 -0.1 -0.3 -0.1 -0.2 -0.2 -0.4 -0.5 -0.3 0.1 0.3 0.1
0.4 0.5 0.2 0.3 0.1 -0.2 -0.2 0.1 0.7 0.8 0.6 0.7 0.4 0.1 0.1 0.3 0.2 0.5 0.6 0.3 -0.1 -0.5 -0.5 -0.8 -0.7 -1.3 -1.1 -0.5 -0.8 -0.6 -0.2 0.1 0.5 0.4 0.6
0.3 0.2 0.3 -0.1 -0.1 -0.3 -0.2 0.2 0.4 0.5 0.8 0.6 0.3 0.1 0.0 -0.1 -0.1 -0.7 -0.5 -0.6 -0.6 -0.4 0.3 0.5 0.4 0.1 0.1 0.2 0.4 0.5 0.5
0.4 0.1 0.2 0.3 0.2 0.2 0.1 0.3 0.6 0.7 0.6 0.4 0.1 0.0 0.1 0.4 0.4 0.6 1.1 0.8 0.3 0.1 0.0 -0.1 0.2 0.1 0.3 0.6 0.2 0.3 0.3 0.2 0.4 0.5 0.5
0.3 0.2 0.3 0.2 0.2 0.0 0.1 0.1 0.2 0.3 0.4 0.7 0.7 0.3 0.1 0.1 0.2 0.4 0.4 0.8 0.9 0.7 0.4 0.0 0.0 0.1 0.2 0.6 0.5 0.5 0.0 0.1 0.3 0.2 0.1
0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.2 0.3 0.4 0.5 0.7 0.7 0.7 0.4 0.1 0.2 0.3 0.2 0.5 0.6 0.7 0.2 0.1 0.1 0.1 0.3 0.3 0.5 0.5 0.3 0.4 0.3 0.2 0.2
0.5 0.5 0.3 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.1 0.3 0.6 0.5 0.1 0.1 0.1 0.1 0.1 0.2 0.6 0.6 0.1 0.0 0.0 0.2 0.3 0.2 0.2 0.3 0.1 0.4 0.5 0.4 0.7 0.6
0.1 0.2 0.5 0.2 0.1 0.2 0.1 0.0 0.3 0.3 0.0 0.2 0.4 0.3 0.2 0.2 0.2 -0.2 -0.2 -0.1 0.1 0.1 -0.1 -0.1 0.0 -0.2 0.0 0.2 0.3 0.1 -0.1 0.0 0.0 0.1 0.2 0.0
0.1 0.2 0.1 0.3 0.0 0.3 0.5 0.3 0.8 0.1 0.1 0.1 0.1 0.3 0.2 0.3 0.3 0.3 0.5 0.5 0.2 0.1 -0.1 0.1 0.2 0.2 0.3 0.4 0.3 0.0 0.0 0.3 0.1 0.2 0.1 0.0
0.0 0.2 -0.1 0.3 0.2 0.2 -0.1 0.5 0.4 0.3 0.5 0.2 0.1 0.2 0.3 0.4 0.4 0.3 0.7 0.5 0.6 0.2 0.3 0.3 0.1 0.2 0.1 0.4 0.3 0.2 0.1 0.1 0.1 0.0 0.3 0.0
0.6 0.4 0.5 0.3 0.5 0.2 0.2 0.7 0.7 0.6 0.3 0.1 0.4 0.0 -0.2 0.4 1.0 0.4 0.2 0.7 0.9 0.6 0.4 0.5 0.4 0.4 0.2 0.2 0.5 0.3 0.4 0.6 0.4 0.4 0.5 0.3
0.5 0.9 0.7 0.3 0.1 -0.1 -0.1 0.4 0.2 0.3 0.4 0.0 0.0 0.2 0.2 0.5 0.3 -0.1 0.3 0.8 0.6 0.3 -0.1 0.8 0.3 0.7 0.3 0.6 0.8 0.4 0.3 1.0 0.8 0.7 0.5 0.4
0.9 0.7 0.5 0.3 0.3 0.5 0.1 0.1 0.4 0.5 0.3 0.1 0.5 0.6 0.4 -0.4 -0.2 -0.8 -1.0 -0.7 -0.4 0.1 0.4 0.0 -0.1 -0.5 -1.4 -1.2 -1.7 -1.3 -1.8 -0.3 -1.1 0.3 0.9
0.1

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
MAY 1994
NOAA-12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 30

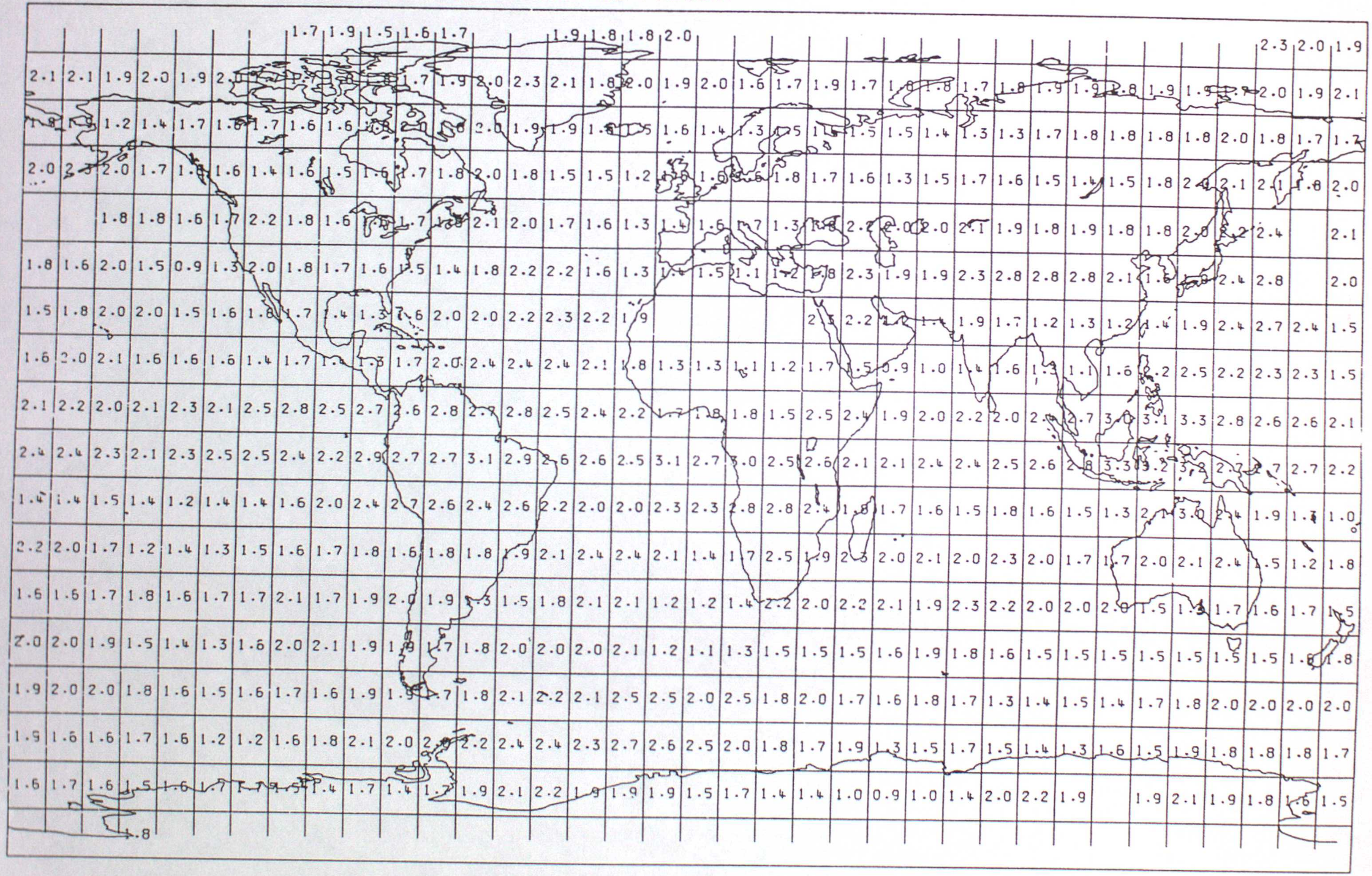

1.7 1.9 1.5 1.6 1.7 1.9 1.8 1.8 2.0 2.3 2.0 1.9
2.1 2.1 1.9 2.0 1.9 2.0 1.7 1.9 2.0 2.3 2.1 1.8 2.0 1.9 2.0 1.6 1.7 1.9 1.7 1.8 1.8 1.7 1.8 1.9 1.9 1.8 1.9 1.9 2.0 1.9 2.1
1.8 1.9 1.2 1.4 1.7 1.6 1.7 1.6 1.6 2.0 1.9 1.9 1.8 1.5 1.6 1.4 1.3 1.5 1.5 1.5 1.5 1.4 1.3 1.3 1.7 1.8 1.8 1.8 1.8 2.0 1.8 1.7 1.7
2.0 2.3 2.0 1.7 1.8 1.6 1.4 1.6 1.5 1.6 1.7 1.8 2.0 1.8 1.5 1.5 1.2 1.5 1.6 1.6 1.8 1.7 1.6 1.3 1.5 1.7 1.6 1.5 1.4 1.5 1.8 2.4 2.1 2.1 1.8 2.0
1.8 1.8 1.6 1.7 2.2 1.8 1.6 1.8 1.7 1.8 2.1 2.0 1.7 1.6 1.3 1.4 1.6 1.7 1.3 1.8 2.2 2.0 2.0 2.1 1.9 1.8 1.9 1.8 1.8 2.0 2.2 2.4 2.1
1.8 1.6 2.0 1.5 0.9 1.3 2.0 1.8 1.7 1.6 1.5 1.4 1.8 2.2 2.2 1.6 1.3 1.4 1.5 1.1 1.2 1.8 2.3 1.9 1.9 2.3 2.8 2.8 2.8 2.1 1.6 1.8 2.4 2.8 2.0
1.5 1.8 2.0 2.0 1.5 1.6 1.8 1.7 1.4 1.3 1.6 2.0 2.0 2.2 2.3 2.2 1.9 2.5 2.2 1.2 1.4 1.9 1.7 1.2 1.3 1.2 1.4 1.9 2.4 2.7 2.4 1.5
1.6 2.0 2.1 1.6 1.6 1.6 1.4 1.7 1.4 1.3 1.7 2.0 2.4 2.4 2.4 2.1 1.8 1.3 1.3 1.1 1.2 1.7 1.5 0.9 1.0 1.4 1.6 1.3 1.1 1.6 2.2 2.5 2.2 2.3 2.3 1.5
2.1 2.2 2.0 2.1 2.3 2.1 2.5 2.8 2.5 2.7 2.6 2.8 2.7 2.8 2.5 2.4 2.2 1.7 1.8 1.8 1.5 2.5 2.4 1.9 2.0 2.2 2.0 2.4 2.7 3.0 3.1 3.3 2.8 2.6 2.6 2.1
2.4 2.4 2.3 2.1 2.3 2.5 2.5 2.4 2.2 2.9 2.7 2.7 3.1 2.9 2.6 2.6 2.5 3.1 2.7 3.0 2.5 2.6 2.1 2.1 2.4 2.4 2.5 2.6 2.8 3.3 3.2 3.2 2.7 2.7 2.7 2.2
1.4 1.4 1.5 1.4 1.2 1.4 1.4 1.6 2.0 2.4 2.7 2.6 2.4 2.6 2.2 2.0 2.0 2.3 2.3 2.8 2.8 2.4 1.8 1.7 1.6 1.5 1.8 1.6 1.5 1.3 2.1 3.0 2.4 1.9 1.7 1.0
2.2 2.0 1.7 1.2 1.4 1.3 1.5 1.6 1.7 1.8 1.6 1.8 1.8 1.9 2.1 2.4 2.4 2.1 1.4 1.7 2.5 1.9 2.3 2.0 2.1 2.0 2.3 2.0 1.7 1.7 2.0 2.1 2.4 1.5 1.2 1.8
1.6 1.6 1.7 1.8 1.6 1.7 1.7 2.1 1.7 1.9 2.0 1.9 1.3 1.5 1.8 2.1 2.1 1.2 1.2 1.4 2.2 2.0 2.2 2.1 1.9 2.3 2.2 2.0 2.0 2.0 1.5 1.3 1.7 1.6 1.7 1.5
2.0 2.0 1.9 1.5 1.4 1.3 1.6 2.0 2.1 1.9 1.9 1.7 1.8 2.0 2.0 2.0 2.1 1.2 1.1 1.3 1.5 1.5 1.5 1.6 1.9 1.8 1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.6 1.8
1.9 2.0 2.0 1.8 1.6 1.5 1.6 1.7 1.6 1.9 1.9 1.7 1.8 2.1 2.2 2.1 2.5 2.5 2.0 2.5 1.8 2.0 1.7 1.6 1.8 1.7 1.3 1.4 1.5 1.4 1.7 1.8 2.0 2.0 2.0 2.0
1.9 1.6 1.6 1.7 1.6 1.2 1.2 1.6 1.8 2.1 2.0 2.0 2.2 2.4 2.4 2.3 2.7 2.6 2.5 2.0 1.8 1.7 1.9 1.3 1.5 1.7 1.5 1.4 1.3 1.6 1.5 1.9 1.8 1.8 1.8 1.7
1.6 1.7 1.6 1.5 1.6 1.7 1.7 1.5 1.4 1.7 1.4 1.7 1.9 2.1 2.2 1.9 1.9 1.9 1.5 1.7 1.4 1.4 1.0 0.9 1.0 1.4 2.0 2.2 1.9 1.9 2.1 1.9 1.8 1.6 1.5
1.8

TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoy.

Area monitored :10°N - 80°N, 85°W - 0°W

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :All hours combined.

Elements monitored :Mean sea-level pressure (hPa)
:Wind speed ($m\ s^{-1}$)
:Wind direction (degrees)

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. A positive bias indicates the observation is veered to the background

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors

GROSS ERROR LIMITS :15 hPa (pressure)
:25 $m\ s^{-1}$ (Vector Wind)

N.B. Observations of wind direction are only included in the wind direction statistics if the wind speed > 3 $m\ s^{-1}$

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA-LEVEL PRESSURE											
13556	23.6	-41.7	ALL	MSLP	SUR	153	0	0	1.6	0.0	1.6
13561	29.7	-26.4	ALL	MSLP	SUR	152	0	0	1.0	0.5	1.1
40503	21.0	-63.0	ALL	MSLP	SUR	2	0	0	0.8	-0.3	0.9
40602	20.4	-42.4	ALL	MSLP	SUR	1	0	0	0.0	-0.5	0.5
40603	25.2	-41.6	ALL	MSLP	SUR	2	0	0	0.4	-0.4	0.6
40604	31.1	-44.1	ALL	MSLP	SUR	1	0	0	0.0	-1.3	1.3
40804	39.7	-27.2	ALL	MSLP	SUR	1	0	0	0.0	0.9	0.9
41522	25.7	-72.3	ALL	MSLP	SUR	267	0	0	0.9	-0.2	0.9
44743	32.9	-34.9	ALL	MSLP	SUR	435	8	2	1.1	0.2	1.1
44760	35.8	-34.9	ALL	MSLP	SUR	19	19	100	0.0	0.0	0.0
44761	59.1	-20.7	ALL	MSLP	SUR	1338	1	0	1.2	0.4	1.2
44763	55.5	-31.1	ALL	MSLP	SUR	2	1	50	0.0	1.9	1.9
44767	55.6	-38.0	ALL	MSLP	SUR	1345	1	0	1.5	0.3	1.5
44768	52.3	-35.8	ALL	MSLP	SUR	1101	1	0	1.5	0.4	1.5
44769	53.6	-30.9	ALL	MSLP	SUR	1306	2	0	1.2	0.3	1.3
44771	54.5	-22.3	ALL	MSLP	SUR	1242	2	0	1.1	0.4	1.2
44777	50.2	-3.8	ALL	MSLP	SUR	3	2	67	0.0	-6.7	6.7
44778	62.7	-16.2	ALL	MSLP	SUR	1446	3	0	1.2	0.4	1.3
62502	46.0	-3.8	ALL	MSLP	SUR	174	0	0	1.2	0.3	1.3
62503	47.8	-8.9	ALL	MSLP	SUR	319	0	0	1.2	0.6	1.3
62504	48.8	-8.2	ALL	MSLP	SUR	352	0	0	1.1	0.5	1.2
62505	48.5	-12.3	ALL	MSLP	SUR	489	0	0	1.4	0.4	1.4
62506	46.7	-6.5	ALL	MSLP	SUR	499	0	0	1.3	-0.8	1.5
62514	41.0	-14.4	ALL	MSLP	SUR	238	0	0	1.4	0.2	1.4
62524	35.2	-22.1	ALL	MSLP	SUR	898	4	0	1.3	0.6	1.4
62695	35.4	-21.8	ALL	MSLP	SUR	549	1	0	1.1	0.3	1.2
62696	60.3	-18.1	ALL	MSLP	SUR	1402	2	0	1.1	0.3	1.1
63662	78.2	-4.7	ALL	MSLP	SUR	558	0	0	1.0	-0.1	1.0
64528	61.2	-27.5	ALL	MSLP	SUR	1202	2	0	1.1	0.2	1.1
65592	62.7	-31.5	ALL	MSLP	SUR	1310	24	2	1.3	0.1	1.3
91920	41.2	-68.9	ALL	MSLP	SUR	1	0	0	0.0	-0.3	0.3
WIND SPEED											
13556	23.6	-41.7	ALL	SPEED	SUR	474	0	0	1.3	-1.3	1.8
13561	29.7	-26.4	ALL	SPEED	SUR	456	0	0	1.6	-0.9	1.8
40503	21.0	-63.0	ALL	SPEED	SUR	2	0	0	1.2	0.3	1.3
40602	20.4	-42.4	ALL	SPEED	SUR	1	0	0	0.0	-2.2	2.2
40603	25.2	-41.6	ALL	SPEED	SUR	2	0	0	0.9	-0.3	0.9
40604	31.1	-44.1	ALL	SPEED	SUR	1	0	0	0.0	3.0	3.0
40804	39.7	-27.2	ALL	SPEED	SUR	1	0	0	0.0	-0.9	0.9
62502	46.0	-3.8	ALL	SPEED	SUR	499	0	0	2.6	0.3	2.6
62505	48.5	-12.3	ALL	SPEED	SUR	347	0	0	2.1	0.0	2.1
62506	46.7	-6.5	ALL	SPEED	SUR	478	0	0	1.8	0.4	1.8
91920	41.2	-68.9	ALL	SPEED	SUR	1	0	0	0.0	-0.9	0.9
WIND DIRECTION											
13556	23.6	-41.7	ALL	DIRN.	SUR	349	0	0	11.3	5.3	12.5
13561	29.7	-26.4	ALL	DIRN.	SUR	311	0	0	15.9	-3.8	16.4
40503	21.0	-63.0	ALL	DIRN.	SUR	2	0	0	12.1	-28.4	30.9
40602	20.4	-42.4	ALL	DIRN.	SUR	1	0	0	0.0	-18.0	18.0
40603	25.2	-41.6	ALL	DIRN.	SUR	1	0	0	0.0	-21.9	21.9
40604	31.1	-44.1	ALL	DIRN.	SUR	1	0	0	0.0	-20.1	20.1
40804	39.7	-27.2	ALL	DIRN.	SUR	1	0	0	0.0	-11.0	11.0
62502	46.0	-3.8	ALL	DIRN.	SUR	319	0	0	36.0	-10.3	37.5
62505	48.5	-12.3	ALL	DIRN.	SUR	210	0	0	21.9	5.2	22.5
62506	46.7	-6.5	ALL	DIRN.	SUR	353	0	0	18.6	-6.2	19.6
91920	41.2	-68.9	ALL	DIRN.	SUR	1	0	0	0.0	-17.3	17.3

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures:
Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :40°N - 70°N, 60°W - 0°W.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :300.0 - 150.0 hPa

Elements monitored :TEMP in °C ; WIND in $m\ s^{-1}$

Parameters monitored

:N REP.	:Number of observations received excluding duplicates.
:PG	:Percentage of observations with gross errors.
:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
:PC	:Percentage of observations with calm winds.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.

GROSS ERROR LIMITS :10.0 °C ; 60 $m\ s^{-1}$ Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

	TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	1522	0	2	1.9	-0.4	1534	0	2	0	7.9	1.2
AAN	37	0	5	3.0	0.1	37	0	11	0	11.5	2.6
ACA	657	0	1	1.9	-0.2	680	0	2	1	6.4	0.5
AEL	150	0	1	1.8	0.0	154	0	1	0	8.8	1.5
AFL	63	6	100	3.6	2.2	64	0	100	2	13.9	1.8
AFR	674	1	5	1.9	-0.1	684	0	6	1	7.6	1.3
AIC	30	0	0	2.4	-0.3	30	0	17	0	16.1	3.7
AMX	175	0	0	1.8	-0.1	175	0	1	0	8.5	1.6
ANZ	171	0	2	2.0	-1.0	169	0	4	1	5.7	1.1
AOM	271	1	2	2.0	0.9	279	1	3	0	9.3	1.8
ATN	170	0	2	2.1	-1.7	173	0	8	1	13.3	3.8
AUA	81	0	1	2.1	-1.3	82	0	1	0	7.2	1.7
AVA	142	0	1	2.0	0.2	150	0	3	0	8.9	1.9
AZA	383	0	3	2.1	0.7	396	0	4	0	8.6	2.5
BAL	129	1	16	2.4	0.0	138	0	17	0	8.5	1.1
BAW	1331	0	3	1.9	-0.1	1339	0	4	0	7.7	1.5
BBB	42	0	24	1.8	-1.0	41	0	22	0	6.8	2.6
BWA	117	1	1	2.3	1.2	118	0	2	0	8.6	2.8
CDN	631	0	3	2.0	0.3	628	0	3	0	6.7	1.3
CFC	23	4	4	1.7	-0.7	24	0	4	0	8.0	0.3
CFG	360	0	100	2.2	-0.9	365	0	5	0	8.5	1.2
CKT	25	0	0	1.6	0.3	25	0	4	0	9.6	2.6
CLX	47	0	0	1.7	-0.3	49	0	2	0	6.7	1.0
CMM	146	0	2	1.8	-0.2	145	0	2	0	8.7	0.8
COA	263	0	5	2.1	0.7	263	0	5	0	8.5	1.4
CRL	59	2	5	2.2	0.3	60	0	5	2	8.0	1.7
CTM	49	0	100	3.3	-1.0	49	0	16	0	8.7	1.7
CUB	63	0	13	2.3	1.2	64	0	11	0	12.6	4.0
DAL	2214	1	1	2.0	0.0	2224	0	2	0	7.8	1.5
DHL	143	1	8	3.6	-1.9	143	1	100	1	10.4	1.9
DLH	1883	0	9	1.9	-0.2	1849	0	13	4	7.1	1.5
DOA	92	1	15	1.8	0.0	92	1	17	0	11.2	-0.4
EIA	54	2	19	2.4	-0.5	58	0	19	0	12.5	4.6
ELY	67	3	7	1.6	-0.4	68	0	6	0	6.9	1.4
EWW	30	0	13	3.7	1.7	32	0	25	0	18.0	9.2
FDX	380	1	3	2.1	0.9	403	0	2	1	8.0	2.0
FIN	335	0	0	2.0	0.2	337	0	1	1	8.0	1.8
GAF	157	0	2	2.1	0.0	157	0	4	3	7.1	1.1
HLF	91	0	100	1.9	-0.8	94	0	3	0	9.0	2.1
IBE	677	1	14	2.0	0.1	679	0	15	0	9.8	1.6
ICE	396	1	1	1.6	0.0	390	0	4	2	6.7	1.0
KLM	1485	0	2	2.0	0.3	1504	0	2	1	7.9	1.6
LDA	196	1	100	2.0	-1.0	203	0	11	0	7.3	0.3
LDI	75	0	100	2.1	-1.1	76	0	4	0	9.3	0.2
LIB	28	11	0	2.4	-0.6	28	0	0	0	6.5	-1.0
LOT	595	1	2	1.9	-0.3	594	0	2	0	8.1	1.2
LTU	398	0	5	1.9	0.2	400	0	5	0	8.9	2.3
MAH	86	0	0	1.9	-0.7	86	0	2	0	6.8	0.9
MPH	357	1	2	1.8	-0.1	360	1	3	0	8.2	1.6
NWA	2398	0	2	2.1	0.8	2429	0	3	1	7.8	1.1
OAL	25	0	8	3.1	2.4	25	0	4	0	5.5	1.0
RAF	25	0	0	1.1	0.2	25	0	0	0	7.5	4.2
RJA	44	0	7	2.3	0.8	46	2	7	0	7.7	2.8
ROY	24	0	0	2.0	1.0	26	0	0	0	6.3	1.4
RRR	139	2	19	2.0	0.1	142	0	20	1	9.1	2.2
SAB	72	0	3	2.5	0.3	74	0	3	0	8.3	1.5
SAS	1601	0	1	1.9	-0.3	1595	0	2	1	6.5	1.1
SIA	62	2	8	2.0	-0.8	62	0	8	3	8.0	1.7
SJM	36	0	11	1.5	0.3	40	0	10	0	9.2	1.2

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
SPP	68	1	4	2.0	-0.3	69	0	3	0	10.7	1.6
SVA	89	1	8	2.5	0.5	90	0	8	0	7.6	1.5
SWR	152	0	3	1.7	0.4	156	0	5	1	7.8	0.6
TAP	344	1	3	1.9	-0.3	341	0	2	0	9.2	1.8
TIH	125	0	2	1.8	0.2	125	0	2	0	7.5	1.6
TOW	54	0	11	2.3	0.6	55	0	11	0	7.7	0.9
TSC	87	7	8	2.0	-0.5	91	0	5	1	8.0	2.2
TWA	889	0	2	2.1	0.4	890	0	3	1	8.9	1.1
UAL	1639	0	3	2.3	-0.7	1653	0	4	2	8.6	1.0
ULE	149	1	3	1.7	0.5	149	1	3	0	7.1	1.3
UPS	290	0	15	1.8	-0.3	297	0	17	0	8.8	1.8
USA	76	0	5	1.8	0.0	76	0	7	3	5.5	0.6
VIA	64	0	2	2.1	0.6	64	0	3	2	9.8	0.7
VIR	110	0	1	1.9	-0.3	114	0	3	1	9.1	1.0
VRB	23	0	17	3.1	0.8	21	0	19	0	14.3	5.3
BA	11593	0	10	1.8	0.5	11548	0	10	0	7.7	1.9
KL	1889	0	100	2.6	2.1	1887	0	8	0	6.2	1.4
LH	301	0	5	2.0	-0.4	294	0	5	0	8.6	1.8
NW	54	0	2	1.1	-0.1	54	0	0	0	6.7	1.0
M	69	3	9	3.4	1.4	72	0	4	0	11.6	4.2
N	223	2	4	2.8	0.7	228	0	1	0	8.5	0.3

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures		
Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS	:Defined in Appendix I.1	

```
 WMO    OBS                    NUM     NUM
IDENT  TIME  ELM   LEV         OBS    GROSS        SD      RMS      BIAS

DBLK    12    Z    100          2       0          8.0     33.0     32.0
FNOR    00    Z    100         13       0         23.8     24.7      6.4
FNOR    12    Z    100         10       0         23.9     25.5     -8.9
FNOU    00    Z    100         13       0         16.4     20.2     11.8
FNOU    12    Z    100          9       0          7.6      8.5     -3.8

FNPH    00    Z    100         14       0         47.7     48.2      7.3
FNPH    12    Z    100         13       0         26.9     28.7    -10.1
FNRS    00    Z    100         11       0         28.1     29.0      7.1
FNRS    12    Z    100         15       0         22.7     23.3     -5.2
GACA    00    Z    100         27       0         17.5     29.6     23.9

GACA    12    Z    100         24       0         17.0     18.0      6.0
JBOA    00    Z    100          1       0          0.0     12.0     12.0
LDWR    00    Z    100         27       0         10.3     18.2     15.0
LDWR    12    Z    100         28       0         10.4     10.4     -0.6
OXYL    00    Z    100         16       0         16.5     26.8     21.1

OXYL    12    Z    100         16       0         27.7     44.8     35.3
OZJP    00    Z    100         23       0         34.4     41.7     23.6
OZJP    12    Z    100         20       0         19.9     28.1     19.9
P3004   00    Z    100         22       0         25.0     28.6     13.9
P3004   12    Z    100         18       0         17.4     21.4     12.5

P3004   00    Z    100          1       0          0.0     12.0    -12.0
SHIP    12    Z    100          2       0         38.0     47.8     29.0
SHIPAA  00    Z    100          9       0         19.8     30.5     23.2
SHIPAA  12    Z    100          6       0         17.3     21.4     12.7
UQYC    00    Z    100          5       0         31.8     33.2      9.8

V2LV    00    Z    100         19       0         15.5     15.9      3.4
V2LV    12    Z    100         17       0         18.7     19.2     -4.2
V2LX    00    Z    100         17       0         25.0     27.2     10.7
V2LX    12    Z    100         16       0         23.0     25.2     10.3
ZSAF    00    Z    100          1       0          0.0     18.0    -18.0

03953   00    Z    100         30       0         15.4     30.9     26.8
03953   12    Z    100         29       0         15.5     23.7     17.9
04018   00    Z    100         29       0         13.6     28.4     24.9
04018   12    Z    100         29       0         15.0     24.5     19.4
04220   00    Z    100         29       0          9.4     32.1     30.7

04220   12    Z    100         27       0         12.0     41.9     40.2
04270   00    Z    100         30       0         11.5     27.9     25.5
04270   12    Z    100         27       0          8.9     37.6     36.6
04339   00    Z    100         28       0         13.9     24.1     19.8
04339   12    Z    100         27       0         12.2     26.7     23.8

04360   00    Z    100         28       0         12.5     29.3     26.5
04360   12    Z    100         27       0         14.1     36.6     33.8
08001   00    Z    100         26       0         21.0     47.3     42.4
08001   12    Z    100         28       0         26.9     44.2     35.1
08508   00    Z    100         29       0         25.7     34.3     22.7

08508   12    Z    100         29       0         17.0     19.2      8.9
08594   12    Z    100         26       0         17.1     18.0     -5.5
60020   00    Z    100         30       0         27.3     27.4     -1.9
60020   12    Z    100         29       0         33.0     33.8     -7.2
71600   00    Z    100         28       0         23.9     26.3     10.9

71600   12    Z    100         25       0         12.8     46.9     45.2
72201   00    Z    100         30       0         33.6     41.7     24.7
72201   12    Z    100         24       0         33.4     49.0     35.9
72304   00    Z    100         27       0         27.5     52.2     44.4
72304   12    Z    100         25       0         52.6     88.0     70.5

72402   00    Z    100         30       0         19.1     42.3     37.8
72402   12    Z    100         28       0         20.2     57.0     53.3
72606   00    Z    100         31       0         22.9     22.9      0.6
72606   12    Z    100         28       0         17.5     29.5     23.8
74494   00    Z    100         27       0         24.0     25.1     -7.2
```

```
 WMO  OBS                NUM    NUM
IDENT TIME ELM  LEV     OBS   GROSS      SD      RMS    BIAS

74494  12   Z   100     25      0     16.2     36.4    32.6
78016  12   Z   100     19      0     24.1     41.2    33.4
```

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures:

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :500 hPa.

Element monitored :GEOPOTENTIAL HEIGHT in metres

Parameters monitored :NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:SD :SD of difference of observations from background values at level shown excluding those with gross errors.

:BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	12	Z	500	2	0	5.0	21.6	21.0
FNOR	00	Z	500	14	0	9.2	13.7	10.1
FNOR	12	Z	500	11	0	7.9	9.2	4.7
FNOU	00	Z	500	15	0	11.2	14.4	9.1
FNOU	12	Z	500	12	0	6.7	9.1	6.2
FNPH	00	Z	500	18	0	20.4	20.8	-3.7
FNPH	12	Z	500	15	0	10.2	12.4	-7.1
FNRS	00	Z	500	13	0	14.9	16.5	6.9
FNRS	12	Z	500	16	0	10.5	10.5	0.6
GACA	00	Z	500	27	0	13.6	16.7	9.7
GACA	12	Z	500	24	0	14.1	14.3	-2.5
JBOA	00	Z	500	1	0	0.0	10.0	10.0
LDWR	00	Z	500	29	0	10.6	11.4	4.3
LDWR	12	Z	500	27	0	10.1	10.2	-1.6
OXYL	00	Z	500	16	0	16.5	17.5	5.7
OXYL	12	Z	500	16	0	9.0	10.5	5.4
OZJP	00	Z	500	24	0	28.2	28.2	1.4
OZJP	12	Z	500	21	0	11.9	12.3	3.2
P3OO4	00	Z	500	22	0	11.5	15.0	9.6
P3OO4	12	Z	500	21	0	8.4	8.9	2.9
P3004	00	Z	500	1	0	0.0	0.0	0.0
SHIP	00	Z	500	1	0	0.0	3.0	3.0
SHIP	12	Z	500	3	0	41.8	67.3	-52.7
SHIPAA	00	Z	500	12	0	10.5	12.3	6.5
SHIPAA	12	Z	500	12	0	11.0	11.6	3.8
SHIPPAA	00	Z	500	1	0	0.0	3.0	3.0
UQYC	00	Z	500	4	0	7.4	19.9	18.5
V2LV	00	Z	500	19	0	14.4	15.8	6.5
V2LV	12	Z	500	21	0	12.5	12.9	3.1
V2LX	00	Z	500	17	0	14.0	16.7	9.1
V2LX	12	Z	500	16	0	15.0	15.6	4.3
ZSAF	00	Z	500	1	0	0.0	1.0	1.0
03953	00	Z	500	30	0	8.0	13.4	10.8
03953	12	Z	500	29	0	9.7	11.4	5.9
04018	00	Z	500	30	0	10.2	14.1	9.8
04018	12	Z	500	29	0	10.2	13.4	8.8
04220	00	Z	500	29	0	10.6	11.7	5.1
04220	12	Z	500	27	0	11.4	13.4	6.9
04270	00	Z	500	30	0	11.4	13.1	6.5
04270	12	Z	500	27	0	8.6	12.1	8.5
04339	00	Z	500	28	0	12.3	15.2	9.0
04339	12	Z	500	27	0	11.5	13.0	6.2
04360	00	Z	500	28	0	9.6	9.6	0.4
04360	12	Z	500	27	0	9.9	10.3	2.8
08001	00	Z	500	26	0	14.1	24.4	19.9
08001	12	Z	500	28	0	24.1	26.3	10.5
08508	00	Z	500	28	0	19.4	24.6	15.1
08508	12	Z	500	28	0	9.5	12.0	7.4
08594	12	Z	500	26	0	9.5	13.2	9.2
60020	00	Z	500	30	0	13.9	20.6	15.2
60020	12	Z	500	29	0	11.4	15.6	10.7
71600	00	Z	500	29	0	13.4	13.4	-0.8
71600	12	Z	500	28	0	14.2	15.4	5.8
72201	00	Z	500	30	0	12.3	15.8	9.9
72201	12	Z	500	27	0	14.6	18.3	11.0
72304	00	Z	500	30	0	9.0	9.5	3.1
72304	12	Z	500	27	0	9.3	15.8	12.8
72402	00	Z	500	29	0	9.9	11.7	6.1
72402	12	Z	500	28	0	13.8	19.6	13.8
72606	00	Z	500	31	0	9.9	9.9	0.4

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
72606	12	Z	500	28	0	15.1	15.1	0.9
74494	00	Z	500	31	0	16.1	17.3	-6.4
74494	12	Z	500	28	0	18.2	18.4	3.1
78016	12	Z	500	21	0	11.4	21.5	18.2

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :100 hPa.

Element monitored :VECTOR WIND in m s^{-1}

Parameters monitored :NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	12	V	100	2	0	0	5.3	3.3	-0.3
FNOR	00	V	100	13	0	0	7.0	1.5	0.1
FNOR	12	V	100	10	0	0	5.3	1.1	0.1
FNOU	00	V	100	13	0	0	2.2	1.3	-1.0
FNOU	12	V	100	9	0	0	5.2	0.3	-1.8
FNPH	00	V	100	13	0	0	5.2	-0.7	0.6
FNPH	12	V	100	12	0	0	2.5	-0.9	-0.4
FNRS	00	V	100	11	0	0	2.5	1.3	0.5
FNRS	12	V	100	15	0	0	4.3	0.0	-0.4
GACA	00	V	100	25	0	0	2.6	-1.1	-0.8
GACA	12	V	100	24	0	0	3.1	-0.3	-0.7
JBOA	00	V	100	1	0	0	2.2	-1.0	-1.4
LDWR	00	V	100	27	0	0	3.4	0.4	-0.2
LDWR	12	V	100	28	0	0	1.5	0.4	-0.2
OXYL	00	V	100	16	0	0	1.7	-0.2	0.8
OXYL	12	V	100	16	0	0	2.2	-0.2	-0.3
OZJP	00	V	100	23	0	0	1.4	0.7	0.2
OZJP	12	V	100	20	0	0	1.9	0.8	-0.9
P3004	00	V	100	22	0	0	1.9	0.0	-0.1
P3004	12	V	100	17	0	0	3.0	0.3	-0.3
SHIPAA	00	V	100	9	0	0	3.3	2.1	-1.0
SHIPAA	12	V	100	5	0	0	3.3	-3.4	-0.9
UQYC	00	V	100	6	0	33	3.3	-1.9	4.8
V2LV	00	V	100	19	0	0	5.9	2.4	0.0
V2LV	12	V	100	16	0	0	5.3	4.7	-0.7
V2LX	00	V	100	17	0	0	7.5	2.2	-0.2
V2LX	12	V	100	16	0	0	3.7	1.3	-0.1
ZSAF	00	V	100	1	0	0	3.9	-1.0	-3.0
03953	00	V	100	30	0	0	2.1	-0.1	-0.7
03953	12	V	100	29	0	0	1.7	-0.3	-1.4
04018	00	V	100	29	0	0	2.0	0.6	0.0
04018	12	V	100	26	0	0	1.8	-0.4	-0.6
04220	00	V	100	29	0	0	1.7	0.1	0.7
04220	12	V	100	27	0	0	2.1	0.5	0.1
04270	00	V	100	30	0	0	2.1	-0.1	0.2
04270	12	V	100	27	0	0	2.3	0.5	-0.8
04339	00	V	100	28	0	0	2.5	0.9	-1.2
04339	12	V	100	27	0	0	2.2	-0.2	-1.6
04360	00	V	100	28	0	0	1.8	0.0	-0.3
04360	12	V	100	27	0	0	1.8	-1.0	-1.4
08001	00	V	100	26	0	0	3.6	0.4	-1.8
08001	12	V	100	28	0	0	2.3	-0.7	-1.9
08508	00	V	100	29	0	0	2.9	-2.0	2.0
08508	12	V	100	29	0	0	4.1	-1.7	1.2
08594	12	V	100	25	0	0	4.1	1.7	2.1
60020	00	V	100	30	0	0	2.8	0.3	1.8
60020	12	V	100	29	0	0	3.3	-0.6	2.4
71600	00	V	100	27	0	0	3.7	-0.7	-0.3
71600	12	V	100	24	0	0	3.1	0.1	-1.0
72201	00	V	100	29	0	0	3.4	0.0	2.2
72201	12	V	100	24	0	0	3.5	-0.6	0.9
72304	00	V	100	26	0	0	4.3	-1.1	0.6
72304	12	V	100	24	0	0	4.5	-0.8	0.9
72402	00	V	100	28	0	0	3.7	-0.9	0.4
72402	12	V	100	27	0	0	3.1	-0.6	1.2
72606	00	V	100	29	0	0	2.4	0.4	0.6
72606	12	V	100	25	0	0	3.4	1.2	-0.2
74494	00	V	100	26	0	0	3.3	0.3	0.3
74494	12	V	100	23	0	0	3.1	0.3	0.2
78016	12	V	100	17	0	0	4.8	-1.8	-1.0

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:May, 94

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :500 hPa.

Element monitored :VECTOR WIND in $m\ s^{-1}$

Parameters monitored :NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	12	V	500	2	0	0	4.7	-3.2	0.9
FNOR	00	V	500	14	0	0	4.7	1.4	-1.1
FNOR	12	V	500	11	0	0	4.0	0.5	-1.0
FNOU	00	V	500	15	0	0	3.7	-1.7	0.1
FNOU	12	V	500	12	0	0	3.3	-0.6	-0.8
FNPH	00	V	500	17	0	0	3.3	-0.7	0.7
FNPH	12	V	500	14	0	0	2.9	0.0	1.1
FNRS	00	V	500	13	0	0	2.5	0.5	-1.1
FNRS	12	V	500	16	0	0	2.9	0.4	-0.8
GACA	00	V	500	27	0	0	3.5	0.7	-0.7
GACA	12	V	500	24	0	0	2.3	0.1	0.6
JBOA	00	V	500	1	0	0	3.5	0.2	0.0
LDWR	00	V	500	29	0	0	2.3	0.5	-0.5
LDWR	12	V	500	27	0	0	2.8	-0.3	-0.6
OXYL	00	V	500	16	0	0	3.1	-0.8	1.2
OXYL	12	V	500	16	0	0	4.1	-1.8	0.1
OZJP	00	V	500	24	0	0	3.3	-0.8	1.4
OZJP	12	V	500	21	0	0	4.0	0.7	-1.5
P3OO4	00	V	500	22	0	0	3.1	1.1	0.0
P3OO4	12	V	500	21	0	0	3.9	0.1	0.0
P3004	00	V	500	1	0	0	2.9	0.2	-0.8
SHIP	00	V	500	1	0	0	2.9	-0.8	-1.0
SHIP	12	V	500	1	0	0	2.9	16.7	5.7
SHIPAA	00	V	500	12	0	0	2.9	0.9	-0.2
SHIPAA	12	V	500	12	0	0	3.6	0.4	1.7
SHIPPAA	00	V	500	1	0	0	3.3	-0.8	-1.0
UQYC	00	V	500	4	0	50	3.3	-1.1	1.9
V2LV	00	V	500	19	0	0	3.3	-1.3	0.2
V2LV	12	V	500	21	0	0	3.6	-1.1	0.1
V2LX	00	V	500	17	0	0	3.4	0.8	1.5
V2LX	12	V	500	16	0	0	2.6	-0.6	0.7
ZSAF	00	V	500	1	0	0	3.0	1.1	0.8
03953	00	V	500	30	0	0	2.1	0.0	0.2
03953	12	V	500	29	0	0	3.5	-0.5	-0.3
04018	00	V	500	30	0	0	2.8	0.2	0.6
04018	12	V	500	28	0	0	3.4	0.7	0.2
04220	00	V	500	29	0	0	2.7	0.1	0.7
04220	12	V	500	27	0	0	3.3	0.8	-0.6
04270	00	V	500	30	0	0	2.5	2.1	-0.1
04270	12	V	500	27	0	0	4.6	-0.6	-1.1
04339	00	V	500	28	0	0	3.8	-0.7	-0.9
04339	12	V	500	27	0	0	2.9	-0.4	-0.6
04360	00	V	500	28	0	0	2.7	-0.6	-0.5
04360	12	V	500	27	0	0	3.5	-0.8	-0.5
08001	00	V	500	26	0	0	3.8	1.5	0.1
08001	12	V	500	26	0	0	3.6	-1.2	-1.2
08508	00	V	500	28	0	0	3.3	1.0	-0.4
08508	12	V	500	28	0	0	3.6	0.4	-0.8
08594	12	V	500	26	0	0	3.6	-2.1	-2.8
60020	00	V	500	30	0	0	3.0	0.7	-0.6
60020	12	V	500	29	0	0	3.1	0.7	-1.3
71600	00	V	500	29	0	0	4.4	0.6	0.5
71600	12	V	500	28	0	0	3.7	0.1	0.9
72201	00	V	500	29	0	0	3.7	1.5	-0.8
72201	12	V	500	27	0	0	3.4	-0.4	-0.9
72304	00	V	500	30	0	0	4.3	0.1	1.6
72304	12	V	500	27	0	0	2.7	-1.0	1.0
72402	00	V	500	26	0	0	2.5	0.3	0.4
72402	12	V	500	28	0	0	2.6	0.0	0.8
72606	00	V	500	30	0	0	3.0	-0.8	1.5

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72606	12	V	500	27	0	0	3.2	-0.2	0.6
74494	00	V	500	31	0	0	4.3	-0.7	1.8
74494	12	V	500	28	0	0	3.5	1.0	1.2
78016	12	V	500	21	0	0	4.8	0.0	0.3

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5,10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45